



The Potential Effects of using CHISELL on Teeth,
Temporomandibular Joints, and Skull Structure.
Future Research Motivation.

Table of Contents

Introduction	3
Data Description and Collection	4
Results	5
Is the extensive chewing bad for a person? If so, why?	6
What are the potential negative and positive changes to the teeth structure due to extensive chewing of tough food?	7
What are the potential negative and positive changes to the skull structure due to extensive chewing of tough food?	8
Do masseter muscles grow in size due to repetitive workouts?	8
Will a long term development of the masseter muscles lead to changes in skull bone structure? If so, how?	9
Will the repetitive strengthening of the masseter muscles be enough to move mandible bone forward?	9
Is there any potential harm to teeth due to repetitive usage of Chisell?	9
Are there any side effects from chewing CHISELL on teeth integrity, teeth positioning and overall teeth health?	10
Is it recommended to chew CHISELL in case of any previous teeth injuries, diseases?	11
Is it recommended to chew CHISELL in case of any previous skull injuries, diseases?	11
What is CHISELL's potential effect (negative/positive) on Temporomandibular joints (TMJ)	12
Does CHISELL have the potential to develop Temporomandibular joint disorder (TMJ disorder)? Please explain.	12
Under which medical conditions chewing CHISELL is not recommended?	13
What is the effect of a long term use of CHISELL on the previously gained fractures in skull structure?	14
Can CHISELL be used by a person wearing braces, invisalign, palate expander, and other orthodontic devices?	15
Comments/recommendations from your side:	15
Discussion	16
Potential Health Impact from using CHISELL	16
Survey Design Analysis	18
Future Research Analysis	18
Conclusion	20
Reference list	21
Appendix	22

Introduction

In the past decades, active lifestyle and exercising has become more and more popular. People introduced in their daily routines cardiovascular exercises and strength training to improve their health, but, just as importantly, to improve their appearance. While cardio and strength training are responsible for the body transformation, one aspect seems to be overlooked, the face. The human face has 43 muscles, all of which aid self-expression through smiles, frowns, etc. (Garden et al.,2020). As any other muscles, they can also be subject to exercise. Moreover, global brands, such as NIVEA, even recommended to perform certain facial exercises to get a more toned and defined facial look (NIVEA, 2020).

Although there are different exercises to improve different facial expressions, one area in which demand has increased is the jawline. The desire to have a more defined, sharp jawline look gave the opportunity for the creation of a new industry: the Jawline Development Industry.

The Jawline Development Industry is newly-emerged and is promoting the improvement of one's personal appearance by transforming the jawline using natural methods. The products from the industry aim to help develop strong facial lines, specifically the jawline, and promote facial masculinization through the growth of the masseter muscles. The masseter muscles represent the muscle group located at the end corners of the lower jaw, also called the mandible. Masseter muscle growth can be achieved through repetitive chewing. This, in turn, highlights the jawline by visually widening the sides of the lower jaw. Like any muscle in the body, the masseter muscle can be developed through consistent workouts, which make the face look more masculine and sharp. Due to the fact that additional muscle volume produces a bigger contrast between the neck and the jaw, the jawline appears more highlighted or, as it is commonly referred to, defined.

Within the Jawline Building industry, CHISELL is the front-runner. With a goal in mind to improve not only the appearance of its customers, but also their confidence, the CHISELL company wants to change the status quo around the globe regarding jawline transformations.

However, nowadays, there is too little information about natural jawline transformation available for the public. More specifically, there is little information that is reliable and backed by statistics. Therefore, more scientific studies and experiments are needed to show that extensive chewing can foster natural jawline transformation.

As the leaders of the newly-developed industry, the CHISELL company feels obliged to produce related research to provide the public with the most transparent information on the product workarounds. As a result, we - the CHISELL company - decided to kickstart the academic journey, and do one of the first researches in the natural jawline development area.

We decided that the first step is to get specialists in the field to share their expertise regarding our product, as well as comment on some concerns brought up by our customers. Due to the exploratory nature of this research, the survey method was chosen. The questions in the survey were based on the inquiries that were most commonly brought up by our customers and some of our concerns as well. This means that all questions are semi-open ended and aim to get as much information as possible with no specific in-depth analysis.

We interviewed 30 specialists. Although the specialists did not communicate with each other, they came, on average, to the same conclusions. This research was conducted only using CHISELL products as samples, therefore findings are not applicable to any other jawline development tools with other density levels or working mechanisms.

Since this research is exploratory, it has two aims. First, we aim to identify the specialist consensus on the potential benefits and drawbacks of using CHISELL for the purpose of advancing jawline aesthetics. Second, we aim to identify future research areas the CHISELL company will be engaging in directly or indirectly and potential tools or information that might help with it.

Further, the paper is structured in the following way. First, we present how we collected the data. Next, we provide a summary of all the survey answers. We summarize each question separately. The final section discusses the results and presents the potential future research areas.

Data Description and Collection

Due to the exploratory nature of this research, a survey was conducted. The survey took place in a 3-month time frame between March 4th, 2020 and June 4th, 2020. A total of 30 experts in the field were interviewed: dentists, orthodontists, and physiotherapists. Due to the nature and functionality of the product provided by CHISELL, we considered these experts to be the most appropriate for the purpose of the research.

The experts come from 12 different countries: USA (1), UK (2), Germany (3), Latvia (9), Lithuania (4), Russia (2), Finland (1), Canada (1), Ukraine (2), Switzerland (3), Netherlands (1), and Georgia (1).

Prior to the interviews or answering the survey questions, the experts were provided with a CHISELL product and additional product description materials, upon request. The interviews were administered through online calls using Skype, WhatsApp, Facebook Messenger, Gmail, and regular phone calls.

None of the specialists have consulted with each other or used CHISELL before the research. This significantly reduced the probability of biased answers. Additionally, the experts were not required to make any extensive research in order to answer the questions. Thus, several answers are of speculative nature based on previous experience and expertise. There was no monetary compensation done in exchange for their expertise.

The survey contains both open-ended and binary questions. In order to gain the most insight, there were no restrictions on the length of the answers. That is, the questions contained a certain level of ambiguity with the purpose to leave more space to answer for the experts. None of the questions were mandatory. Therefore, some specialists either didn't answer some questions, or asked to not use their answers publicly.

Three sets of questions were created for the survey, based on the level of expertise of the specialists in this particular research area. Dentists have the narrowest expertise needed for the research. Therefore, their set of questions contains 7 questions. Orthodontists have a wider expertise in this respective research field. Hence, they were asked to answer 13 questions. Finally, experts specialised as both dentists and orthodontists have answered all the questions, namely 16 in total.

Several experts requested to stay anonymous. Thus, their interviews will be marked with N.A., noting their anonymity. Otherwise, the expert's name, position and institution of activity is provided in the Appendix (Appendix 1).

Most experts were surveyed in English, although it is not their native language. Alternatively, several interviews have been translated into English from Russian.

The answers were summarized by questions, and presented in the Appendix.

Results

The following section summarizes the answers provided by the experts. Each section represents the summary of one of the questions. To gather a proper

understanding, the answers to each question have been separately added in the Appendix. Appendix 1 represents the list of experts with an ID number assigned, while Appendix 2-17 represent the summaries of each question, with the first column representing the ID of the respective expert. Thus, in order to see which expert answered to a specific question, you should match the ID to the one in Appendix 1. This method was chosen for easier navigation for the reader as well as for a more concise and accurate opinion on each question.

Is the extensive chewing bad for a person? If so, why?

In order to understand the general effect of extensive chewing, the first question aims to be broad and collect as much information as possible.

When asking this question to the experts, we mentioned that, in this research, we assume extensive chewing to be continuous chewing sessions longer than 20 minutes. That is, nearly non-stop chewing for 20 minutes.

A total of 5 out of 15 orthodontists stated that extensive chewing potentially causes no harm to a person with a healthy teeth structure and no serious previously gained injuries of teeth, the jaw or large fillings, crowns, implants, etc.. Moreover, they argue that, since the human jaw is designed to deal with chewing tough food for a long period of time, extensive chewing is just a normal operation for a healthy human.

Even so, all of the experts pointed out several areas of concern and research, which can be grouped in the following categories:

- Potential impact on teeth structure (additional pressure, tooth abrasion / increased teeth sensitivity, weakening/loosening of teeth);
- Potential impact on jaw joints and skull structure (additional pressure, weakening of joints);
- Potential impact on muscles (additional strain, headaches, migraines);
- Potential impact on digestive process (elevated gastric pH).

Several of the experts pointed out that the above mentioned effects are more likely to happen to people which have existing issues with their teeth, jaw joints, and muscles. In that case, extensive chewing is likely to exacerbate the issue and potentially worsen it.

In the next sections, we will explore more in-depth each potential impact and it's mechanism.

What are the potential negative and positive changes to the teeth structure due to extensive chewing of tough food?

Out of the 21 experts that were asked this question, 7 stated that, if the person has no previous injuries or conditions, such as periodontitis, and is chewing tough food a reasonable amount of time, then no changes should occur to the teeth structure.

Moreover, these experts pointed out some positive effects as well. First, chewing tough food can help with the development and proper formation of the lower jaw, thus making the jaw stronger. Second, chewing tougher food contributes to the mechanical cleansing of the teeth. This is especially useful for places hard to reach with a toothbrush or even floss. Lastly, due to the additional muscle activity, the vascular system around the jaw area can potentially improve.

However, extensive chewing may lead to several negative effects as well, which the experts pointed out. It is important to note that, if the person has previous injuries or conditions, such as periodontitis, missing teeth, large fillings, etc, then chewing tough food can worsen the condition.

The main effect that the experts warn us about is the process of tooth abrasion. Human teeth have a layer of enamel on them. This layer protects the teeth from getting cavities, infections, and breakage. Tooth abrasion happens when the enamel layer is destroyed by mechanical factors, such as chewing tough food or chemical factors, such as consuming soda and candy. The first symptom that can be noticed by the person is tooth sensitivity to hot, cold, or sweet foods and drinks. Furthermore, if the tooth abrasion is severe, the teeth are exposed, and tend to break, crack, chip or loosen much easier. As the experts pointed out, this effect may happen to people with healthy teeth as well, but not to a large extent (Colgate Oral Care, "Tooth abrasion", 2020).

The next effect mentioned by the experts is the speeding up of the deterioration process of the teeth. Teeth, like any other part of your body, wear out with use and time. The more activity or strain is added to them, the faster they deteriorate. Thus, by chewing excessively, specifically tough food, the process of wearing out of the teeth can potentially be sped up.

Another effect is the overstimulation of the salivary glands which, when chewing food next to them, produce more saliva than needed. This, in turn, may lead to more stone deposit on the teeth.

Finally, several effects were mentioned for people with previous or existing conditions which may worsen due to extensive chewing :

- In the case of missing teeth, extensive chewing can speed up the movement of the existing teeth in the freed up space. This may lead to teeth loosening as well.
- In the case of excessive chewing to an unreasonable extent, bruxism may be developed.

What are the potential negative and positive changes to the skull structure due to extensive chewing of tough food?

8 out of 15 experts who were asked this question confirmed that no changes happen to the skull structure. According to some of these experts, if you are a healthy person with no major jaw, skull or teeth injuries, then changes in your muscles should not affect your skull structure. Moreover, it can potentially be beneficial by increasing the bone density, and, consequently, its strength.

On the other hand, the experts do outline several negative effects.

One such effect is the weakening of the jaw joints due to additional strain added by extensive chewing. According to the experts, this can cause crackling sounds around the joint and trigger potential painful sensations. Furthermore, some experts say that the growth of the muscles due to extensive chewing of tough food can put additional pressure on the jaw bone and lead to early atrophy and potentially change the function of the joint. This can cause difficulties in performing the “open-close” process of the jaw. The negative effects will worsen faster for people with previous conditions, such as jaw dysfunction.

One interesting effect which seems more neutral is the fact that “the muscles will tighten the bones bringing them closer to each other, the lower third of the face will decrease, which will also lead to aesthetic changes, the person will look older.”

Do masseter muscles grow in size due to repetitive CHISELL workouts?

The growth of the masseter muscle is the reason the jawline visually becomes wider and more defined. The masseter is the muscle that ensures the “closing” movement of the lower jaw. All 15 orthodontists concluded that masseter muscles indeed grow in size due to repetitive workouts. One important aspect to be mentioned here is that several experts emphasized the importance of consistency in the workouts. That is, growth in the masseter muscle is just like any other muscle growth: in order to preserve the progress, consistent workouts must be performed.

Will a long term development of the masseter muscles lead to changes in skull bone structure? If so, how?

When answering this question, 9 out of the 15 orthodontists stated that no changes should happen to the skull bone structure from a long term development of the masseter muscles. This is mostly the case for people with no previous injuries or serious conditions that affect the jaw bone or teeth.

Some experts say that developed masseter muscles can lead to stronger skull tissue and increased bone density. They also say that stronger muscles provide more protection to the skull and strengthen the ligaments.

The rest of the experts say that potential negative effects are changes in the jaw joints, weaker jaw bone and the potential development of bruxism, which can eventually lead to TMJ problems.

It is interesting to observe the opinions being nearly equally split. It potentially shows the extent to which this area of research is unexplored or, the extent to which the specialists' experience influences their answers.

Out of all experts, 3 of them mentioned that the skull structure is mostly still forming when you are 20-24 years old. Thus, in such cases, the experts speculate that there might be some changes in the skull structure and thus, they are more reluctant to recommend using CHISELL. If you are older, using CHISELL should not have any effect on the skull structure.

Will the repetitive strengthening of the masseter muscles be enough to move mandible bone forward?

The general consensus (14/15) for this question is that repetitive strengthening of the masseter muscles will never be enough to move the mandible forward. The masseter muscle is only controlling the "up and down" directions of the mandible bone movement, it does not control the mandible's forward and backward movement. Hence, growth and strengthening of the masseter muscles due to CHISELL workouts has no potential for moving the mandible bone forward or backwards.

Is there any potential harm to teeth due to repetitive usage of Chisell?

Out of the 21 experts that answered this question, 8 agreed that no potential harm can be done to teeth due to repetitive usage of CHISELL. That is in the case in which there are no major pre-existing or existing conditions, such as bruxism, TMJ

dysfunction, issues with the bite, periodontitis, etc. If a person has such conditions, using CHISELL might worsen them faster.

Although the experts pointed out that repetitive usage of CHISELL may lead to tooth abrasion, sensitivity and potential breaks and chippings, they did state that, if CHISELL is used as instructed, these effects should be minimal.

One recommendation came for people with prosthetics, and that is to try to avoid using CHISELL as “excessive force can harm the prosthetic (uncemented restoration, fracture of prosthetic, breakage of restoration or supporting tooth).”

Furthermore, three interesting points were brought up.

First, one expert argued that the chewing load centralized on only individual (or maybe two) teeth leads to tooth canal damage. He argues that, if the pressure is split between several teeth, then there is much less strain on the teeth structure system. It can be argued that the way CHISELL is built, the pressure is spread among several teeth, which does minimize the pressure on the teeth.

Second, one expert argued that the material from which CHISELL is made is much softer than the teeth, and “ it does not decompose in your mouth”. He argues that a lot of teeth problems are caused by sugar and acids that come from the food we eat. Thus, the repetitive use of CHISELL doesn't necessarily bring any harm to the teeth.

Third, a negative effect was pointed out by one of the experts, saying “due to muscle spasms, the bite changes, and there is increased pressure on the teeth because muscles at night will try to relax, which will lead to teeth grinding.”

Are there any side effects from chewing CHISELL on teeth integrity, teeth positioning and overall teeth health?

All 30 experts have answered this question. Out of them, 11 stated that there are no side effects from chewing CHISELL on teeth integrity, positioning and overall health. Some even see positive effects, where chewing CHISELL helps strengthen the jaw muscles. One expert stated that people nowadays chew less, and that causes bite problems and other dental anomalies. Thus, promoting more chewing of tougher foods can be beneficial.

Nevertheless, the experts that don't see any side effects from chewing CHISELL did recommend the following:

- People who use CHISELL should discuss it first with their dentist or orthodontist. They should also stay alert to new pain or uncomfortable sensations and report them to their dentists.
- The tool must be clean at all times.

The other 19 experts pointed out several side effects that can happen due to chewing CHISELL. Firstly, by overusing CHISELL a person may worsen pre-existing issues, such as periodontitis, bruxism, teeth fractures and tooth loosening. Secondly, in the case of overuse, the overall teeth structure may suffer as well. Teeth may become weaker and softer, making it more probable for a fracture to happen. Third, overuse of CHISELL may result in the loss of hard enamel, which is a vital part of healthy teeth. Lastly, overuse of CHISELL may affect the bite of a person, as well as deteriorate the periodontal tissue.

However, it should be mentioned that all of these conditions are primarily related to previously gained teeth injuries and illnesses. This means that bruxism and teeth breakage may arise if a person has already previously had symptoms. In other cases, where teeth are healthy, no serious breakages and illnesses should occur naturally.

Is it recommended to chew CHISELL in case of any previous teeth injuries, diseases?

Out of the 19 experts that answered this question, 12 experts do not recommend using CHISELL in case of previous teeth injuries or diseases under any circumstances. They argue that the teeth or joints are weakened due to the existing injury and adding the level of pressure CHISELL provides can lead to further and faster damage.

Several experts (7) pointed out that, in order to make a decision, they need to be presented with much more information about the patient. There are other variables that can influence their decision, such as how long ago the injury took place and what is the current situation. Due to that, they emphasize that people with previous teeth injuries or diseases should always consult with their dentist or orthodontist before using CHISELL.

Finally, 2 of the experts see potential benefits from using CHISELL if the injuries are not severe and the product is used under the doctor's supervision. They argue that CHISELL can be a great rehabilitation tool which can help strengthen the masseter muscles.

Is it recommended to chew CHISELL in case of any previous skull injuries, diseases?

Out of the 17 experts, the majority (13/17) are against recommending to chew CHISELL in case of any previous skull injuries or diseases. Experts see more damage from using CHISELL brought to skull injuries rather than to teeth injuries. The main argument brought up is that the pressure provided by CHISELL is too strong for the

weakened skull structure from the injury. Therefore, the injury may relapse or worsen without the patient noticing it. It is clear that skull injuries are more sensitive, and experts strongly recommend consulting with your dentist or orthodontist before deciding to use CHISELL.

On the other side, one of the advantages after an injury is that a person can not only strengthen the jaw bone structure, but also improve the aesthetic look, for example, in case of muscle asymmetries (for example one side masseter is smaller than the other due to trauma, stroke etc.).

What is CHISELL's potential effect (negative/positive) on Temporomandibular joints (TMJ)

The majority of the interviewed orthodontists argue that CHISELL might have a negative effect on the Temporomandibular joints (TMJ). The general consensus is that additional pressure on the joints may weaken them, and eventually impact TMJ's mobility, making it harder to open-close the mouth and causing a lot of pain, jaw clenching and jaw lock. Similar to all previous questions, this is more dangerous for people with current or previous TMJ issues.

On the other hand, one expert mentioned that given that the injuries are healed, Light Bite should not create any harm. Another expert sees a positive effect on the TMJ, saying that CHISELL strengthens the muscles and tendons, making the jaw movement stronger.

Therefore, CHISELL should be used according to the training routine, just like any other training gear, with no extensive overusage.

Does CHISELL have the potential to develop Temporomandibular joint disorder (TMJ disorder)? Please explain.

Before analysing this question, it is important to understand what the TMJ disorder presumes. TMJ diseases or dysfunctions happen when the joint is not working properly due to improper use or injuries, and thus causes joint pain (Mayo Clinic, "TMJ Disorders", 2020).

A total of 14 orthodontists agreed that CHISELL can contribute to the development of the Temporomandibular joint disorder (TMJ disorder). This is due to the fact that the pressure provided by CHISELL puts additional strain on the joints, and, consequently weakens the joint by wearing it out. Consequences of this can be joint pain, crackling sounds and joint dysfunction.

If CHISELL is overused, or used irresponsibly, it can cause muscle tension due to its overstimulation. Since CHISELL provides much more resistance than the average gum or other food, joints may be overloaded. Due to the high pressure that is generated, joints may start working less efficiently. As a result, the mouth movement may become more challenging, since a person may develop pain in the joints (neuromuscular and structural problems of TMJ) - also referred to as a partial TMJ disorder. The final level of TMJ disorder is that a person is unable to open-close his/her mouth properly.

However, the experts emphasize that the TMJ gets worn off from other activities, such as chewing, talking, kissing etc. Hence, it is not the movement mechanism CHISELL promotes that affects the TMJ, rather the length and strength of the activity.

Hence several experts pointed out that the most dangerous approach is excessive use of CHISELL. A 10-20 minute workout is acceptable, however, longer and more strenuous workouts can bring much more harm and exacerbate existing issues.

One of the orthodontist's mentioned that TMJ is not different from any other joint in terms of wearing out. The TMJ wear can be compared to "jumper's knee", a condition where the knee joint wears out, in sports like basketball, running, etc.

Under which medical conditions chewing CHISELL is not recommended?

Every specialist gave insights about medical conditions under which the use of CHISELL is not recommended at all.

Below is a summary of such medical conditions:

- Deep caries;
- Soft and weak teeth structure;
- Pulpitis - a condition where the inner tooth tissue (where the nerve is found) is inflamed. As a result, you can feel increased tooth sensitivity, pain, and tooth loss (Colgate Oral Care, "Pulpitis", 2020);
- Teeth cracks, breaks or trauma/injuries;
- Muscle and/or joint damage;
- Periodontitis - a condition where the gums are inflamed to the point where they affect tooth tissue and bone, and lead to teeth loosening and falling (Mayo Clinic, "Periodontitis", 2020).
- Bruxism - a condition in which you grind or clench your teeth, either consciously or not. This process can be damaging to the tooth structure, as it can cause tooth abrasion, tooth sensitivity and breaks (Mayo Clinic, "Bruxism", 2020);

- Jaw fractures;
- Teeth bridges;
- Orthodontic structures;
- Inflammation of temporomandibular joint or facial muscles;
- After fresh surgical interventions in facial area;

The experts also outlined some medical conditions which are more rare, but still worth mentioning:

- Central nervous system disorders;
- Stomach diseases;
- Throat tumors;
- Anorexia;
- Trigeminal neuralgia - a condition of the trigeminal nerve, which is responsible for the face nerves, which causes extreme pain when people with this condition touch or move their faces (Mayo Clinic, "Trigeminal Neuralgia", 2020);
- Hyperchlorhydria - a disorder which causes increased amounts of stomach acid, and, thus, is more likely to lead to stomach ulcerations and acid reflux (Merriam Webster Dictionary, "Hypochlorhydria", 2020);
- Osteoporosis - a condition, where bone regeneration is slowed down, making the bones weaker and more brittle (Mayo Clinic, "Osteoporosis", 2020);
- Epilepsy - a nervous system disorder causing seizures or uncontrollable movements (Mayo Clinic, "Epilepsy", 2020).

What is the effect of a long term use of CHISELL on the previously gained fractures in skull structure?

Out of the 15 orthodontists, 4 see no effect of a long term use of CHISELL on the previously gained skull fractures provided that the injury has fully healed. Another 4 experts believe that it depends on the time when the injury took place and the current state of the patient. They believe that each case is individual and recommend to discuss CHISELL use with their dentist and/or orthodontist.

Finally, 6 other experts pointed out that a long term use of CHISELL has the potential to worsen the previously gained skull fractures. Therefore, they do not recommend using CHISELL at all.

Can CHISELL be used by a person wearing braces, invisalign, palate expander, and other orthodontic devices?

One of the most common questions regarding using CHISELL is whether one can use the product while wearing braces, invisalign, palate expander or any other orthodontic devices. Therefore, all specialists were asked to answer this question. The majority (20/30) of the specialists consider that chewing CHISELL while wearing any devices is strictly forbidden. They believe that using CHISELL while wearing such devices may slow down the intended development produced by the device. In addition, due to the repetitive pressure application on teeth, it may slow down the healing process.

Nevertheless, 10 out of 30 specialists concluded that CHISELL can be used in case it does not harm the orthodontic device and does not create any pain.

All experts mention that a consultation with their dentist and/or orthodontist will be helpful in understanding if CHISELL can be used. Moreover, they encourage people to mention their CHISELL use during their doctor's visit to make sure the doctor has full information.

Comments/recommendations from your side:

As a last question, we asked all 30 specialists to share their further recommendations and additional comments about the usage of the product and its potential threats/opportunities for the development of CHISELL. Some specialists also shared insights and recommendations for the CHISELL use for potential customers. The majority of these specialists advise to monitor one's jaw and teeth health on a daily basis when using CHISELL and make a doctor appointment and consult or alert their doctor when they witness adverse changes from using CHISELL.

Some of the most detailed comments/recommendations are provided below, while the rest of these recommendations you can find in the Appendix (Appendix 17).

- It should be understood that the effect will only be visible with continuous use of this product, the result obtained when you stop using it returns to the previous position;
- The product may be dangerous in case of previous injuries/illnesses;
- Hygiene should be a vital part of the use of the product. If it won't be clean all the time, teeth may suffer;
- Perhaps, CHISELL might force the wisdom teeth to rise;
- Pregnant women wanting to try the product should first visit the doctor;

- If CHISELL is a part of a person's daily routine, they should also watch their diet, water intake, and physical exercise to make sure the results are beneficial.

Around one third of the experts (10/30) pointed out the need for more research in the field. They argued that a lot of the questions should be answered through individual research. Some even suggested the best ways to do so.

Finally, 5 experts said that they would not recommend the product to their patients as there is little information on the potential harm the product can bring in the short and long term.

Discussion

When looking at the results summarized above, 3 main areas of discussion can be derived:

- Potential Health Impact from using CHISELL
- Survey Design Analysis
- Future Research Analysis

Potential Health Impact from using CHISELL

To be able to analyze the whole potential health impact of a person that uses CHISELL, we are going back to the first question answered, where experts pointed out the areas involved in the chewing process.

We can clearly identify them now after summarizing all the answers:

- teeth structure;
- muscles (specifically, the masseter muscles);
- jaw joints (specifically the temporomandibular joints, TMJ)
- The mandible (bone/skull structure);
- The stomach.

Together, these 5 elements are outlined by the experts to be impacted by the process of chewing CHISELL.

Looking at all the answers, we can clearly conclude that a person with healthy teeth, muscles, joints, bones and stomach, that uses CHISELL as instructed, will potentially harness minimal to no health impact except bigger and stronger masseter muscles, and the benefits it may bring. Nearly every question has the experts point out that healthy people don't have much to worry about.

However, it is clear that not all people are the same, and cavities, fillings, tooth abrasion and all other conditions are quite common. Therefore, the CHISELL company

highly recommends, for people with previous conditions, if possible, to consult with your dentist or orthodontist before using the product. Furthermore, for some conditions, it is nearly forbidden to use our product.

Although the summary of the questionnaire provides an extensive list of recommendations, concerns and explanations, we would like to summarize some of the most important ones.

- Human teeth and TMJ, just like any other joint, bone, organ, etc, are susceptible to wearing out. Hence, the more we use our teeth, joints or muscles, the more they will wear out. In this case, chewing CHISELL, or anything for that matter is not an exception. Therefore, experts point out this as a cautionary and informative advice, that teeth and TMJ can wear out and weaken.
- In the case of the teeth, using CHISELL in an improper way or in an unreasonably excessive matter might lead to tooth abrasion. This might make your teeth more sensitive, break or chip, or even teeth loosening. Thus, it is important to keep proper hygiene with the product and use it correctly (as instructed by the CHISELL company).
- There are a number of cases (orthodontic appliances, braces, large fillings, crowns, etc) in which people who want to use CHISELL should first check with their doctor, and the CHISELL company highly recommends doing that. Many experts pointed out that each case is individual, and general advice is contraindicated. Thus, people should go through the Results section and inform themselves in case they have previous or existing injuries or conditions.
- It has been unanimously concluded that the masseter muscle grows in size due to the CHISELL usage. As expected, the company's claim on the masseter muscle growth has been confirmed by every single surveyed specialist.
- CHISELL usage does have the potential for the development of problems with temporomandibular joints according to the surveyed specialists. As we come to learn from the survey, TMJ follows the same logic as other joints and is susceptible to wearing out. The severity, and exact harm potential, however, has not been identified.
- Pre-existing teeth, joint and skull structure problems may be worsened by extensive CHISELL usage. If a person already has problems with joints and teeth, using CHISELL is not recommended as it would put additional stress on the problematic areas.

- In case of major teeth, joint or skull structure injuries, there is no consensus on when can CHISELL be used. Since there is ambiguity in this area, we recommend to always consult with your dentist or orthodontist.

Survey Design Analysis

One important aspect to discuss is the survey design we employed in the research. Although 30 experts can be a representative sample to assure accuracy in answers, there are some things to consider.

First, the experts were not required to make any preliminary research. Their answers are nearly fully based on their experience. Thus, in the raw data found in the appendix, we can see a lot of speculative answers using “not sure” and “maybe”. This doesn’t speak to the expertise of the surveyors, rather to the lack of research in the field. Thus, showing how crucial it is to start a research line in this area.

Second, the questionnaire itself can be modified in the future. While the questions were open-ended, somewhere formulated to seem binary. Thus, a lot were left unexplained due to the nature of the questions. Thus, we recommend for future research to adopt a fully open-ended survey approach and potentially use focus groups as an alternative.

Finally, an important aspect to mention is that, although the experts were from different countries, and have different levels of expertise, they all agreed on more than half of the questions. This shows the representativeness of the sample and accuracy of the answers. On the same note, some questions were answered significantly in opposite ways. We believe that this is also helpful to outline the potential future research areas to focus more on.

Future Research Analysis

From the survey data analysis it is more than clear that this field is not researched. More than a third of the experts stated that the lack of research stops them from recommending our product to their patients. Furthermore, several questions yielded controversial answers or speculative ones. Thus, further research is needed.

Based on the expertise collected in the survey, we found helpful data to guide the next research.

First of all, we believe it is important to outline specifically how CHISELL impacts the teeth, joints, muscles, and ligaments. Thus, one potential research focus can be to

involve experts and define the mechanism in which CHISELL impacts the human body. Next, there are a lot of iterations of research that can be done.

Here are the main questions to be answered:

1. What is the exact impact of using CHISELL on teeth/jaw bone/TMJ?
2. What is the relative impact of using CHISELL on teeth/jaw bone/TMJ versus extensive chewing of tough food or gum?
3. How does the growth of the masseter muscle due to CHISELL impact the teeth/jaw bone/joints, etc?
4. Does using CHISELL accelerate existing conditions/injuries, etc?
5. What is the optimum workout length and strength using CHISELL to minimize potential negative effects?
6. Does using CHISELL cause tooth abrasion and to which extent?
7. What is the impact of using CHISELL for people with braces, orthodontic appliances, crowns, etc?
8. What is the impact of using CHISELL on TMJ and can it cause TMJ disorder?
9. Can CHISELL usage cause/foster/accelerate the development of bruxism?

To be able to answer to the above questions, we suggest the following variables to be considered:

- Previous or existing conditions - is it healed, current situation, the severity of the condition, etc.;
- General statistics - age, gender, lifestyle habits (diet, exercise level, hydration level);
- Genetic implications;
- Length, frequency and strength of CHISELL usage;
- Length of experiment (experts recommended 6m to 1 year);
- Experts involved - dentists, orthodontists, kinesiologists, osteopaths, physical trainers, etc.
- Progress tracking method - experts suggest radiographies, 3D scans, etc.

In order to advance the jawline development industry further, the CHISELL company is willing to offer support by partially or fully sponsoring further research. We aim at bringing the most transparent and accurate information to our clients about the intricacies of jawline development. The only way for CHISELL to change the status quo around the globe is by continuously uncovering more and more objective truth about jawline development products and the anatomy of the human jaw. The CHISELL company does not have the necessary expertise and manpower to conduct all the

research that is needed. Therefore, the CHISELL company is willing to partially/fully sponsor and support the proper scientific research.

Conclusion

This research was created to satisfy two purposes. First, we aimed to identify the specialist consensus on the potential benefits and drawbacks of using CHISELL for the purpose of advancing jawline aesthetics. Second, we aimed to identify future research areas the CHISELL company will be engaging in directly or indirectly and potential tools or information that might help with it.

This research was conducted only using CHISELL products as samples, therefore findings are not applicable to any other jawline development tools with other density levels or working mechanisms.

As it was previously stated, it is our goal to bring more objective truth about our product to the market. This paper is the first step towards a more comprehensive research.

Although the experts' answers are based on their specific fields of experience, their feedback helped us understand the importance of scientific research in the jawline development field. Most of the answers, although speculative, have helped us outline the main health impact of using CHISELL. The conclusion is that healthy people with no previous injuries should experience minimal to no impact on their health, except growth in the masseter muscle. If, however, a person has teeth, joint or skull conditions, they must consult with their doctor before using CHISELL.

Finally, we managed to develop a general understanding on the potential future research topics. In addition, we outlined several framework specifics, such as potential variables, and areas of academic research, which can be helpful.

To sum up, the jawline development field must be researched both qualitatively and quantitatively. Thus, the CHISELL company, as the front-runner of the jawline development industry, is determined to support further research with the purpose to uncover more objective truths in regards to the growing jawline development industry. The CHISELL company has the capacity to sponsor monetarily as well as provide inventory resources to scientists who are willing to conduct a proper scientific study on the topics described in the "Future Research Analysis" section of this paper.

Reference list

- Colgate Oral Care. (2020). *Causes and Signs of Dental Abrasion | Colgate® Oral Care*. Colgate.com. Retrieved 11 August 2020, from <https://www.colgate.com/en-us/oral-health/basics/brushing-and-flossing/causes-and-signs-of-dental-abrasion>.
- Colgate Oral Care. (2020). *Reversible and Irreversible Pulpitis: Causes & Treatment | Colgate®*. Colgate.com. Retrieved 11 August 2020, from <https://www.colgate.com/en-us/oral-health/conditions/mouth-sores-and-infections/reversible-and-irreversible-pulpitis--causes-and-treatment>.
- Garden, H., HowStuffWorks, Science, Science, Mind, & Emotions. (2020). *How many muscles does it take to smile?*. HowStuffWorks. Retrieved 11 August 2020, from <https://science.howstuffworks.com/life/inside-the-mind/emotions/muscles-smile.htm>.
- Mayo Clinic. (2020). *Bruxism (teeth grinding) - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/bruxism/symptoms-causes/syc-20356095>.
- Mayo Clinic. (2020). *Epilepsy - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/epilepsy/symptoms-causes/syc-20350093>.
- Mayo Clinic. (2020). *Osteoporosis - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/osteoporosis/symptoms-causes/syc-20351968>.
- Mayo Clinic. (2020). *Periodontitis - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/periodontitis/symptoms-causes/syc-20354473>.
- Mayo Clinic. (2020). *TMJ disorders - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/tmj/symptoms-causes/syc-20350941>.
- Mayo Clinic. (2020). *Trigeminal neuralgia - Symptoms and causes*. Mayo Clinic. Retrieved 11 August 2020, from <https://www.mayoclinic.org/diseases-conditions/trigeminal-neuralgia/symptoms-causes/syc-20353344>.
- Merriam Webster Dictionary. (2020). *Medical Definition of HYPERCHLORHYDRIA*. Merriam-webster.com. Retrieved 11 August 2020, from <https://www.merriam-webster.com/medical/hyperchlorhydria>.
- NIVEA. (2020). *How To Tone Your Face With Facial Exercises – NIVEA*. Nivea.co.uk. Retrieved 11 August 2020, from <https://www.nivea.co.uk/advice/lifestyle/how-to-tone-your-face-with-facial-exercises-234>.

Appendix

Appendix 1. The list of specialists with additional information

ID	Name	Position	Institution	Country	Language of Survey
1	Dace Čakārne	Orthodontist	RSU Institute of Stomatology	Latvia	EN
2	Dr. Edīte Ieviņa	Orthodontist	Centra Dental Clinic	Latvia	EN
3	Maria Sterna	Orthodontist	Zahnarztpraxis	Switzerland	RU
4	N.A.	Endodontics, Dental Prosthetics, Aesthetic Dentistry.	N.A.	Germany	EN
5	N.A.	Periodontist	University of Zurich	Switzerland	EN
6	N.A.	Biomedical scientist	Anglia Ruskin University Cambridge Campus	UK	EN
7	N.A.	Orthodontist	Dental clinic in Martinlaakso	Finland	EN
8	Alma Paskeviciute	Dentist	N.A.	Canada	EN
9	Thomas Sanders	Physical Therapist	N.A.	Netherlands	EN
10	Bjarne Pohlmann	Dentist	Gemeinschaftspraxis Dr. Pohlmann & Schockenhoff	Germany	EN
11	Sibylle Pohlmann	Dentist	Gemeinschaftspraxis Dr. Pohlmann & Schockenhoff	Germany	EN
12	Johannes Rohr	Dentist	RSU Riga Stradins University	Latvia	EN
13	N.A.	Dentist	Lithuanian University of Health and Sciences	Lithuania	EN
14	N.A.	Dentist	International Dental Aesthetic School	Latvia	RU
15	N.A.	Orthopedic Dentist	Dental Clinic "Smile"	Ukraine	RU
16	N.A.	Physical Therapy Aide (PTA)	St. John's Health	USA	EN
17	N.A.	Orthodontist	Boscobel House Dental Surgery	UK	EN
18	N.A.	Orthodontist	VUL Santaros klinikos	Lithuania	EN
19	Pestryakova Marina Sergeevna	Dentist	Clinic Dent	Russia	RU
20	Anastasija Dvornikova	Dentist	Olainmed	Latvia	RU
21	Raminta Bugelytė	Dentist	Lithuanian University of Health and Sciences	Lithuania	EN
22	Tamuna Pacacia	Associate Dentist	Vega Dent	Georgia	EN
23	N.A.	Dentist	Dental Clinic "Smile"	Ukraine	UA
24	Irina Mauka	Dentist Orthodontist	RSU	Latvia	EN
25	N.A.	General Dentist	MD Jonas Basanavičius Military Medical Service	Lithuania	EN
26	Kastukova Victoria Vladimirovna	Orthopedic Dentist	Clinic Dent	Russia	RU

27	N.A.	Dentist	Clinic in Baden	Switzerland	EN
28	Irina Sevelova	Dentist	RSU Institute of Stomatology	Latvia	RU
29	Viktoria N.A.	Dentist	Dental Clinic "Zobu Feja"	Latvia	RU
30	Aleksandra Borzole	Orthodontist	Dental Clinic "Zobu Feja"	Latvia	RU

Appendix 2. Summary of expert answers to the question: "Is extensive chewing bad for a person? If so, why?"

ID	Full Answer : "Is extensive chewing bad for a person? If so, why?"
1	Yes, it over-stimulates the TMJ. Chewing also elevated the gastric pH, as the body gets ready to receive chewed food but doesn't.
2	Yes, it is bad, since it has great and unnecessary pressure on teeth and joints. A person gets a lot of pressure naturally while eating, for example. Additional pressure makes the joint weaker, resulting in pain.
3	Enamel erosion and weakening of the teeth + additional muscle strain + migraine (headaches due to long exercises) + changes in the jaw joint. All dentists try to relive the additional pressure on the masseter muscle using Botox (which relieves headaches). CHISELL does the opposite, creating additional pressure for the masseter.
7	Extensive chewing might result in higher sensitivity of the teeth, while it also raises stomach acidity, which is bad for a person. As a result, too high acidity arises the organism disorder.
9	In my opinion extensive chewing is not a bad thing to do for a person, although it could result in an overuse of certain muscles which are required to form this repetitive movement. This overuse may result in muscle fatigue and soreness, which could lead onto inflammation of the muscle as they will not recover fast enough.
14	Yes, the joints are weakening, the process of "opening-closing" of the jaw gets worse.
15	It can have a heavy load on the teeth, and also worsen the durability of the joints.
16	No, it is not bad for a healthy organism.
17	It may affect the structure of teeth. Since the product is softer than the teeth, the effect should be small. But people with unhealthy teeth can suffer a lot.
18	It is bad since it creates additional pressure that harms teeth (they become weaker and softer).
22	Bad, since Chisell is not equally used on the upper and down side of the jaw. As a result, dysfunction of jaw and skull bone.
24	Not at all if an organism is healthy. People are chewing all the time while eating tough food, so our body is used to it.
27	Our teeth are getting enough pressure during the day. Additional chewing makes them weaker.
29	This is a complicated question. To be short, most likely not, since people are used to chewing different foods since childhood.
30	Gastric juice is secreted, but food does not come to the stomach - gastritis may develop. Tense muscles and joint changes will lead to feelings of pain.

Appendix 3. Summary of expert answers to the question: "What are the potential negative and positive changes to the teeth structure due to extensive chewing of tough food?"

ID	Full Answer : "What are the potential negative and positive changes to the teeth structure due to extensive chewing of tough food?"
3	Tooth abrasion - old people have worn off teeth, the tubercles are flat, because they have been eroded over life (and this is the natural tooth abrasion). CHISELL, in turn, speeds up the wearing off process.
4	None, although everything excessive is negative. Nothing positive here.
5	Teeth become weaker, as a result they can break.
6	The possible consequences of frequent chewing of solid food can affect the teeth that are next to the salivary glands, the more a person chews, the more saliva will be produced, thereby there will be more stone deposits on the teeth than in everyday life.
8	In the case of a healthy, young person, no fillings, no missing teeth it could lead to abrasion of the teeth surface. In the case of a person who already has periodontal disease it would lead to teeth loosening. Keep in mind prosthetics damage due to unbalanced force.
10	Over a person's lifetime all teeth get worn down by chewing food. Especially if we chew tough foods this damage can get worse which can lead to chipping or exposure of dentine which further leads to sensitivity of the teeth.
11	Negative effects are stated as above tooth wear, movement or even fracture. The device should not be used if patients have weak teeth.
12	Tooth fracture, wearing of teeth and dental appliances/fillings.
13	I don't think it has any negative or positive effect on healthy teeth, but it may cause your teeth to break if they are already damaged.
14	There are no special negative effects. Teeth do not rub too much.
15	Too much strain on the joint, and also it may destroy the teeth structure.
19	Positive changes: the development and proper formation of the lower jaw, mechanical cleansing of the teeth. With prolonged exercise, negative changes in the lower jaw joint, bruxism, can occur.
20	With prolonged use, pathological abrasion of enamel may occur - teeth can become more sensitive.
21	Eating solid food promotes self-cleaning of teeth. If the teeth are healthy, then eating solid food is recommended, but if the teeth are not, solid food should be avoided to avoid cracking, breaking, etc. In general, the human body is highly adaptive, so it can be assumed that long-term chewing of harder food undergoes structural changes (both dental, periodontal and bone), and is adaptable to the changed conditions.
23	Too much acid liquid arises as a result of extensive chewing.
25	As I wrote before, one of the negative changes could be teeth moving to free space if one or few teeth in the jaw are missing. Also weak, damaged periodontal tissues might be hurt and a tooth/teeth (if it's a general disease, involving many teeth) might become mobile. A positive thing could be stimulating a vascular system of the jaw, periodontal tissues. I also think it is healthy for people to chew tough food as our teeth are suitable for that and they are not doing what they are created for while chewing soft food.
26	No positive changes, as for negative - inflammation periodontal tissues.
27	Since teeth become more sensitive, they get washed faster
28	As a result, the teeth are eroded, becoming less durable.
29	Changes in enamel chips, potentially cracked teeth.
30	Abrasion, cracks, chips, fillings, crowns.

Appendix 4. Summary of expert answers to the question: “What are the potential negative and positive changes to the skull structure due to extensive chewing of tough food?”

ID	Full Answer: “What are the potential negative and positive changes to the skull structure due to extensive chewing of tough food?”
1	The structure of the skull does not change, the structure of the muscle changes, as it gets bigger. The origin of the muscle does not change the bone structure. It can change the function of the joint.
2	Normal body physiology is affected, which is bad. A person is getting additional pressure on jaw bone that should be avoided.
3	There is no positive, negative - weighing on the bone leads to early atrophy of the bone.
7	The skull structure should not change. However, too much chewing can cause the sensitivity/weakness of the jaw skull. Too much pressure on the jaw is bad, since there is a limit for our body how much to move, workout and chew.
9	Form follows function is applicable to bone structure so my assumption is that it's actually good to put the bone structures under a certain form of pressure as it will increase the density of the bone and thus increase the overall strength of bone tissue.
14	Unreasonable strain - products should be connected from the point of view of safety.
15	A weakened joint will lead to crackling sounds in the jaw, pain in the jaw. As a result, tightness of the jaw.
16	Jaws can become stronger due to repetitive workouts.
17	There are not many effects on the jaw. The only one I can come up with is an overload on the jaw, resulting in dysfunction and help from the specialist's side.
18	In case teeth are strong and healthy, there is no problem chewing tough food. But if there were previously gained injuries or diseases of a teeth structure, tough food may worsen the situation/ruin the teeth structure.
22	Joints can be overpressured by Chisell; therefore, crackling sounds may occur in the jaw when a customer opens and closes the mouth.
24	If teeth and jaw are healthy – no effect; otherwise, may cause pain and crackling sounds.
27	Too much chewing results in weak skull structure; therefore, pain and crackle in the jaw.
29	No effect.
30	The muscles will tighten the bones bringing them closer to each other, the lower third of the face will decrease, which will also lead to aesthetic changes, the person will look older.

Appendix 5. Summary of expert answers to the question: “Do masseter muscles grow in size due to repetitive workouts?”

ID	Full Answer: “Do masseter muscles grow in size due to repetitive CHISELL workouts?”
1	Yes, they grow as any other muscles.
2	Yes, they grow. But if a person only develops his/her masseter muscle, muscle balance is affected. It is incorrect to workout on only one muscle.
3	It grows in size, like any other muscle. The same motor muscle as the biceps.
7	Yes

9	Yes, every muscle has the ability to increase in size as it is a physical process of the body, this applies to any form of strength training or any use of muscle at all. It is of course required to do this over a longer time span.
14	Yes, but not equally.
15	It does.
16	Yes, for sure!
17	Of course.
18	Yes, definitely.
22	Yes
24	Yes, but then you need to work out all the time.
27	Yes, they grow.
29	Yes.
30	Exercises provoke muscle shortening, making it tighter.

Appendix 6. Summary of expert answers to the question: "Will a long term development of masseter muscle lead to changes in skull bone structure? If so, how?"

ID	Full Answer: "Will a long term development of masseter muscle lead to changes in skull bone structure? If so, how?"
1	No, it should not lead to any changes.
2	Masseter muscles are the biggest bruxism reason. The bigger the masseter, the higher is the probability of getting bruxism. As a result, TMJ disorder. In case bruxism is reached.
3	May lead to a pathological change in the jaw joint.
7	It will give a visual effect of bigger bone; however, no real changes should arise in skull bone structure.
9	As I noted before, if you use certain bones in your body more often it will increase the density of the bone tissue. I'm convinced this will not increase in size but it can in fact make the skull tissue stronger.
14	In the process of growth, the muscles pull the bone and where there is tension, there is growth. In theory, people up to 20-24 years can influence the growth of the jaw bone, after which it is no longer the case.
15	The bone structure should not change, but may become weaker due to wear / tear.
16	Jaw bones should not be changed, but I am not sure.
17	Skull bone can become more protected, since a bigger amount of muscles will surround it, but no change to skull bone structure.
18	It may have some effect on a not fully developed organism (under 21-24 y.o.). No effect on an adult's skull bone structure.
22	No, it should not lead to any change in skull or jaw bone structure. However, it may affect the jaw structure of a person under 21 years old, whose body is still in the process of development.
24	No, the skull bone is solid and should not be affected.
27	Potentially changes in jaw structure (weaker!).
29	Perhaps, for example, will strengthen the ligaments

30	It will lead, the upper and lower jaw will be closer to each other, reducing the lower part of the face and pushing the lower jaw forward
----	---

Appendix 7. Summary of expert answers to the question: "Will the repetitive strengthening of masseter muscles be enough to move mandible bone forward?"

ID	Full Answer: "Will the repetitive strengthening of masseter muscles be enough to move mandible bone forward?"
1	No. No workouts will be enough to move it.
2	No, since it has only the function of opening and closing the jaw. It has nothing to do with the forward and backward moves.
3	More likely no than yes. There are other factors that can affect it, so it's hard to accurately answer.
7	I don't think so. Masseter muscles movements are up and down. No side movements. Therefore, no mandible bone should move forward.
9	I think the length of the masseter muscle is more important in moving the mandible bone forward. As the masseter muscle will probably increase in overall size but not gain noticeable more length. So I assume this will not move the mandible bone forward.
14	No!
15	Never.
16	No, since masseter does not move in front directions.
17	I don't think so. I would say no.
18	Absolutely no, because it does not move in these directions (only up and down!)
22	No, it is impossible :)
24	No, since masseter has different movement directions.
27	No, it should not force the mandible bone to move forward.
29	Most probably no.
30	It could.

Appendix 8. Summary of expert answers to the question: "Is there any potential harm to teeth due to repetitive usage of Chisell?"

ID	Full Answer: "Is there any potential harm to teeth due to repetitive usage of Chisell?"
3	Pathological abrasion is the main problem.
4	Chewing load centralized on only individual (or maybe two) teeth, this leads to tooth canal damage over higher load. If split between teeth, then more relaxing on the teeth structure system.
5	Due to overpressure, teeth can break; small fractures can arise.

6	The teeth structure should not change a lot. Nevertheless, teeth can become more sensitive, if a person overworks with CHISELL.
8	Person with any dental prosthetic should keep in mind that excessive force can harm the prosthetic (uncemented restoration, fracture of prosthetic, breakage of restoration or supporting tooth).
10	Again if used as instructed and not too extensive there should not be a big harm to the teeth itself. I see the potential side effects more prone in the temporomandibular joint and muscle.
11	Yes. Usage could lead to tooth wear but more worrying are other parts of the Orofacial region.
12	Tooth wear, development of tension in the jaw muscles and neck that can lead to many different problems.
13	I don't think there is any harm from repetitive usage of chisell on teeth because it is softer than teeth and it does not decompose in your mouth and many teeth problems are caused by sugar and acids which are released from food you chew.
14	No huge changes to teeth structure.
15	The biggest effect is bite problems. A person with minimal problems will aggravate the situation.
19	Yes, if a person has bruxism, the muscles contract even more, the disease is aggravated.
20	But the product is too hard, so it can (!) have the following negative consequences: The muscles will work forcefully and quite intensively - maybe there is a parafunctional activity of the masticatory muscles, which can lead to change in the joint (clenching teeth). It can also create excessive tension in the joint. All this can lead to rapid muscle fatigue - changes in the joint (changes in tissue, relief of the articular surface) - as a result of overload and even trauma.
21	As the teeth are additionally loaded and if they are not healthy (damaged by decay or fillings) - possible decay, cracking of teeth and / or fillings, etc. Due to the constant chewing of this product, I think one of the risks may be the abrasion of the chewing surfaces.
23	Additional pressure that is created by CHISELL negatively affects teeth structure - teeth become more sensitive and may break.
25	I don't think there could be any harm for healthy teeth with perfect periodontal health. It may cause serious problems for people with periodontitis (acute or chronic), especially with a severe one. It might be harmful with a lack of one or few teeth, especially molars because neighbouring teeth can start to move into a free space very quickly. Other diseases like big caries or pulpitis/periodontitis might become severe and give serious symptoms because of the repetitive pressure.
26	The teeth are not directly harmed, all problems will arise in periodontal tissues.
27	Teeth become more sensitive, weaker.
28	Unpleasant sensations, tooth abrasion, overload on the joint.
29	Gingival recession due to workload, tooth sensitivity increases.
30	Has, due to muscle spasms, the bite changes, there is increased pressure on the teeth because muscles at night will try to relax - this will lead to grinding teeth, which means increased abrasion of enamel, which over time will lead to dental problems.

Appendix 9. Summary of expert answers to the question: "Are there any side effects from chewing CHISELL on teeth integrity, teeth positioning and overall teeth health?"

ID	Full Answer: "Are there any side effects from chewing CHISELL on teeth integrity, teeth positioning and overall teeth health?"
1	Yes (loosening of hard enamel)
2	Teeth might become more sensitive and weaker in their structure, if too much pressure is put on them for a long time (more than 10 min/more than 2-3 months)
3	A person usually chews with his back teeth, as a result, CHISELL can cause pathological wearing of teeth. Also, the tubercles of the teeth can become flat (affects the human bite).
4	Damage to the tooth support, fillings, crowns, dentures, etc. No possible positive effects on teeth.
5	Too much pressure is created while chewing the product. Human teeth are not used to such a tough product.
6	No particular effect on teeth. Chisell should not harm them in any way since the product is softer than teeth; therefore, should not make any changes in teeth structure.
7	I think that tooth structure should not be affected a lot. Maybe they will become more sensitive but it depends on genetics.
8	Since the product is not designed for the problems relating to oral health I couldn't say it has a positive effect on teeth. The negative impact on teeth could be overstress on periodontal tissue especially periodontal ligament. As well if the tooth was treated endodontically and has a big filling, where excessive pressure could lead to fracture. The same if the tooth had a microfracture before – it can lead to a bigger fracture. If the tooth has huge filling it could bring sensitivity to that tooth.
9	I would not recommend people under the age of 21 (adolescent) chewing CHISELL as their bone structure is not fully grown and this can most likely influence the positioning of the teeth.
10	In a strong and healthy human being without any known genetic or acquired tooth hard tissue issues there should be minimal effects on the teeth if patients use the device as instructed. If the device is not used as instructed (on the occlusal surfaces of molar teeth) and is used at a different angle to the long axis of the teeth it could cause hard tissue defects as seen in bruxism, tooth fracture as well as unwanted tooth movement in different directions.
11	There are no expected positive effects on the teeth. Negative effects include excessive wear of teeth, slight movement of teeth or even tooth fractures if the tooth is already weak. The side effects on the joint and the including muscles are more worrying. From a dentist standpoint the application would never be advised.
12	Potential effect could be strengthening of jaw muscles, which will most likely not increase aesthetics of face symmetry and jaw musculature (those factors are dependent on fat amount and distribution in the face and overall anatomy), increased chewing force has negative effects on TMJ and can lead to problems concerning positioning of the joint and wearing of joint disc. Consequently wearing of teeth can occur, including development of hypersensitivity, fractures of teeth and pain.
13	I don't think it will have a negative effect on healthy teeth, but it might have a negative effect on unhealthy teeth so if you have any problems you should probably consult your dentist or orthodontist.
14	Neutral. Teeth are used to chewing solid food (nuts), therefore they should not break. No serious effect.
15	A tough product can cause enamel problems (crumble). Traumatic effect on the joint. Bite problems
16	For healthy organisms, there are no threats; for a weak one Chisell can do more harm than positive.
17	Teeth are solid and they are made naturally to break and chew tough materials. I don't think that CHISELL can negatively affect teeth integrity or overall health. It is important to keep the tool clean all the time.
18	Overchewing may fasten bruxism and make teeth structure weaker.
19	The positive effect is that the training of the masticatory muscles takes place, but if there are any diseases of the teeth (remotes, periodontitis), then the use of CHISELL will cause pain.

20	The material the product is made of is very dense and therefore limits its use. If it were for example, silicone, then everything would be different. The idea in itself is not bad. Nowadays people chew less and the bite suffers from it - all sorts of anomalies of the dentition.
21	It's hard to say about the potential effects on teeth. Teeth should be evaluated before wearing and changes in the use of CHISELL should be monitored.
22	Teeth can become more sensitive, chewing may be more painful after a long time.
23	Teeth are getting too much pressure that results in possible painful feelings.
24	If teeth are healthy, no injuries – nothing bad can happen. Any parafunction (too much pressure than is naturally needed) can affect negatively. It can cause harm only if teeth are injured or dead – may worsen the injury and result in serious damage.
25	If the silicone is not very hard, I don't think there should be any negative impacts for a healthy person with healthy teeth and an orthognathic bite. But I think a man should check his oral health before using this product not to create too much pressure for cracked teeth or teeth with periodontal problems and so on. His oral health should be perfect.
26	Overload is possible, which will lead to further deterioration of periodontal tissue.
27	Even though Chisell can potentially highlight the jawline, it has a few negative effects: - Pathological teeth abrasion - Teeth overload - May get stuck in the throat
28	Overload on the periodontium (tooth and bone ligaments) stimulates the development of masticatory muscle problems. With the help of special caps, doctors treat patients (ease the load), and CHISELL complicates the situation by a turn. In addition, tooth enamel may crack.
29	There should not be a particularly negative effect on malignant teeth.
30	Inflated muscle = spasmodic, squeezed, this affects the change in the bite, which in turn affects the joint, the wear of the joint increases, tension of the facial muscles can develop bruxism over time, which will lead to enamel abrasion, because of this, clicks may appear when opening mouth, can also lead to headaches. No pluses for teeth.

Appendix 10. Summary of expert answers to the question: "Is it recommended to chew CHISELL in case of any previous teeth injuries, diseases?"

ID	Full Answer: "Is it recommended to chew CHISELL in case of any previous teeth injuries, diseases?"
3	No, it is completely forbidden to load teeth with injuries.
4	Rather not. Are there any long term studies on the Chisell? Just an example here: if a patient's jaw is out of line (not linear), the training with Chisell won't make it any better. Even worsen the situation if the chewing was made in a non-linear motion.
5	NOT RECOMMENDED!
6	It depends on the level of the injury. If a new injury (up until 2 months), then it is not recommended since Chisell can worsen its recovery process.
8	It depends on the injury, disease and current condition.
12	Not recommended, with previous injuries/diseases either the teeth or jaw are weakened, additional pressure on these structures can lead to further problems.
13	I think you should not use chisell after experiencing teeth injuries, or disease without consulting with your dentist. It is very individual and we cannot mix all the diseases/disorders in one plate.

14	No, as it can aggravate the injury.
15	If the injury is fresh, then no. If many years ago, then there will be no harm.
19	NO.
20	I think not, I still need to take into account this aspect - when chewing, saliva and gastric juice are released. If a person has an acidic stomach, then chewing Chisell can aggravate his underlying disease.
21	The use should be safe. And if the damage to the molars is resolved with prosthetics, then the extra load should not hurt. I would not recommend using this device in severe periodontal disease.
23	Not really, since any additional pressure and work increases the chances of getting additional injuries. Nevertheless, after a long period has passed, you can try to chew it.
25	I think it could be a good idea to chew CHISELL after jaw fractures when a person can't chew for a month (or more) and all chewing systems become really weak. CHISELL could help strengthen it. But I think it could only be done under supervision of a doctor.
26	Not recommended.
27	Not at all.
28	May aggravate injuries in the past. As an example, teeth with a removed nerve are more fragile - the reward is even greater! If crowns are placed, then CHISELL can be used if the nerve is removed and without crowns - no.
29	No.
30	Categorically not, strong pressure can trigger a relapse of the injury.

Appendix 11. Summary of expert answers to the question: "Is it recommended to chew CHISELL in case of any previous skull injuries, diseases?"

ID	Full Answer: "Is it recommended to chew CHISELL in case of any previous skull injuries, diseases?"
1	Maybe If there are any muscle asymmetries (for example one side masseter is smaller than the other due to trauma, stroke etc), it is possible to change the cosmetic appearance.
2	I would say that it should not cause any problems, injuries in the future.
3	Not! Never! Injuries should heal, not worsen!
7	Already answered in the previous question: If it is a new injury – cannot use. If it was many months ago (>2 months) – should not affect it.
9	I don't think that this is necessary for any individual recovering from injuries or diseases. As this is not scientifically proven to have any health benefits.
10	Any injury to the teeth weakens the single tooth and can lead to further complications in life. Due to the extensive force applied by the product I would not recommend any client to use a tough resistance and stimulate the previous teeth injuries. As we all know how expensive such teeth repairs are it is up to every client to use the product in his own demands but a warning should be given for sure.
11	It is not recommended. Previous injuries and even fillings weaken the tooth in general.
14	Not, it is forbidden.
15	If the injury is reduced, it can aggravate, otherwise, it should be fine.
16	Yes, because that is how you strengthen your bones.
17	It is completely unrecommended! The injury can get worse, while a person will not recognize it.

18	Yes, see previous point: May worsen the injury only if it is a newly gained one. Otherwise, no effect. But I would recommend to ask your doctor before starting the workout.
22	It is less recommended than for those who did not have any injuries.
24	No, if the injury still exists.
27	No.
29	No.
30	Categorically not, strong pressure can trigger a relapse of the injury.

Appendix 12. Summary of expert answers to the question: “What is CHISELL’s potential effect (negative/positive) on Temporomandibular joints (TMJ)?”

ID	Full Answer: “What is CHISELL’s potential effect (negative/positive) on Temporomandibular joints (TMJ)?”
1	Negative, as it can be a cause of frequent headaches/migraines and cause lockjaw and jaw clicking.
2	TMJ disorder that results in constant pain and a person's disability to close/open/move the mouth properly.
3	It can lead to overload, which will lead to arthritis, arthrosis.
7	Too much pressure may negatively affect TMJ. It can become more sensitive, less efficient (slower movements of open-close), may arise pain.
9	I assume it has a positive effect on the TMJ, as it will probably increase the strength of the muscles and tendons which are involved in the movement of the TMJ.
14	Joints wear out, with improper use, the jaw joint is overdriven and will stop working. The joint has a huge range of movements, which is under the influence of tension.
15	Weakens the joint, worsens its work.
16	It may harm Temporomandibular joints if there were some injuries in the past. However, I think that with Light Bite it should not harm any problems.
17	Joints are harmed due to too much pressure. Naturally, workout from eating meals 3 times per day + other activities like kissing is already enough for joints. Any additional pressure force TMJ to overload.
18	TMJ suffers from too much chewing, as a result, joints become weaker, it becomes more challenging for a person to open his mouth, continuous pain and organism disorder.
22	Negative effects, joints become more sensitive (customer can feel pain, scratches).
24	Can cause the TMJ or worsen the existing one.
27	Overload of TMJ – as a result, pain and dysfunction.
29	Huge load, abrasion of the joint.
30	Only negative

Appendix 13. Summary of expert answers to the question: “Does CHISELL have a potential to develop Temporomandibular joint disorder (TMJ disorder)? Please explain?”

ID	Full Answer: “Does CHISELL have a potential to develop Temporomandibular joint disorder (TMJ disorder)? Please explain?”
1	Yes. It causes muscle tension as the muscle gets overstimulated.
2	TMJ disorder results in a certain pain of joints (neuromuscular and structural problems of TMJ).
3	Maybe the jaw joint fails for a long time (basketball player’s knees, for example).
7	Yes, in case the person uses Chisell too much. I think that 10 minutes is more than enough. But those who use it incorrectly or with certain injuries in the jaw structure, may harm themselves very badly.
14	Maybe, since Chisell makes the joint sore. Subsequently, the joint weakens.
15	Maybe the joint is eroded even without Chisell. The product reduces the life of the joint, making it weaker, sluggish.
16	Yes, since Chisell gives too much pressure than an average gum or other food. Joints are forced to overwork for a long period every second day.
17	Yes, since the pressure of 85kg resistance for a few months is a lot. Taking into account the fact that some handsome men will work every single day for more than 2-3 months, their joints are in danger zones.
18	Yes, it has. As already discussed, TMJ becomes weaker -> mouth movement becomes more challenging -> a person feels pain and crunches that may result in partial or complete TMJ disorder (partial – mouth opens/closes slower and not fully; complete – mouth does not close till the end).
22	Yes, it is likely, since due to repetitive workouts there is too much pressure on the joint. As a result, it becomes sore and other dysfunctions may occur.
24	Can potentially, if a person overuses with Chisell. Any additional pressure can result in TMJ disorder!
27	Of course, it can, too many exercises affect disbalance in TMJ functionality.
29	Most likely yes, due to the load on the joint
30	Maybe the temporal joint is forced to function improperly, arthrosis and pain may develop over time, up to problems with opening the mouth.

Appendix 14. Summary of expert answers to the question: “Under which medical conditions chewing CHISELL is not recommended?”

ID	Full Answer: Under which medical conditions chewing CHISELL is not recommended?
1	Not sure, as there is no clinical research about this.
2	If a person already has bruxism (the majority of the society)
3	Wearing orthodontic equipment, trauma to the teeth and jaw, bruxism.
4	Ligament damage, TMJ damage, product damage, split teeth, risk of breakage of filled teeth, heavily overloaded muscle tone patients, people with a high risk of aspiration hazard, hygiene problematic patients, and perhaps many more!
5	Previously gained fractures in teeth/jaw structure, Teeth illnesses, Bruxism

6	Peptic Ulcer Disease (PUD) If a person has acid reflux Zollinger- Ellison Syndrome (Rare but worth of mentioning it) Anorexia, Hyperchlorhydria and more.
7	Bruxism can worsen, Broken teeth may get worse.
8	Bruxism. Periodontal diseases. Removable prosthetics. Bridges with three or more parts, cantilever bridge. Temporary crowns. Implants. Any recent surgical procedures. TMJ diseases or problems, pain. Keep in mind if a person has an unbalanced occlusion or more teeth on one side it would stress TMJ.
10	In any case of genetic or acquired hard tissue injury to the teeth I would not recommend to use the product. Examples of genetic medical conditions are amelogenesis imperfecta or osteoporosis. Examples of acquired pathologies are periodontitis and also patients who have crowns, implants, endodontic fillings and post & core. Additionally I would not recommend people with bruxism to use the device, because it may stimulate the effect of bruxism and cause problems in the Temporomandibular joint and the whole muscular system. Also it should not be recommended to people with epilepsy due to the extensive training of masseter muscle which may lead to problems in a seizure attack.
11	Under most medical conditions the device would be not recommended. These medical conditions include neuropathic problems like epilepsy, psychosomatic problems like bruxism as well as dental problems for example tooth movement. There are articles showing the advantage of such devices for patients with weak muscular systems in case of logopedic (speech) problems.
12	Under most medical conditions like malocclusion, TMJ problems, bruxism, myofunctional disorders, etc. Might be beneficial in patients with weakened musculature and consequent speech, swallowing, chewing problems (but that needs to be indicated by a dentist, physiotherapist or speech language therapist).
13	I would not recommend chewing chisell if you have cracked teeth if you are lacking any tooth, that is used while chewing Chisell or experiencing any tooth pain, and if you have any other medical conditions you should consult your dentist. You should also study what if a customer has any allergies.
14	Bruxism, injuries of the jaw structure
15	After fresh surgical interventions, wearing orthodontic dental appliances.
16	During the injury it is not recommended to have any workouts
17	Existence of bruxism + orthodontic devices
18	Bruxism, any previous problems with TMJ, maybe with sharp teeth
19	Braces, diseases of the teeth, periodontal and mandibular joints.
20	It is very very very good to ask the patient about all his side diseases (if any) and limit the use of Chisell.
21	In the presence of disorders of the temporomandibular joint, in the absence of molars, in the poor condition of molars, in the case of abrasion of the chewing surfaces, in severe periodontal pathology.
22	Serious surgeries in the past, plastic operations
23	Bruxism, a lack of a few teeth
24	Paradanthos, TMJ
25	Just my opinion - deep caries, pulpitis, periodontitis, tooth crack, severe genera periodontitis, partial adventitia, jaw fractures, inflammation of temporomandibular joint o facial muscles etc.
26	With a decrease in the number of teeth in the dental arch, with chronic periodontitis, bruxism, with pathological abrasion of the teeth.
27	Serious injuries in the past, weak jaw and teeth.
28	If there are serious injuries of the jaw in the past (fractures) + if very weak, brittle teeth.
29	Trigeminal neuralgia, epilepsy, schizophrenia, tumors, stomach diseases
30	Under any!!!

Appendix 15. Summary of expert answers to the question: “What is the effect of a long term use of CHISELL on the previously gained fractures in skull structure?”

ID	Full Answer: “What is the effect of a long term use of CHISELL on the previously gained fractures in skull structure?”
1	If there are no clinical research, I can't comment that
2	Injuries that are already healed will not be affected. A person can chew Chisell if the injury was in the past.
3	Yes, injuries can worsen. I do not recommend it!
7	If it is a new injury – cannot be used. If it was many months ago (more than 2 months) – should not affect it.
9	Depending on the time that an individual person has gained the fracture, location and severeness plus the amount of use of the product. I believe that it most likely is a positive benefit to bone structure but that will most likely differ on every individual.
14	I do not recommend it in the presence of injuries.
15	If the fracture is 10 years ago, then there is no negative effect.
16	I have trained people with completely broken bones in the past and no threat was there. I think that it is ok if an injury was in the past. You can come up with the most appropriate workout routine for you not to harm your organism.
17	Chisell might worsen the condition due to repetitive overpressure exercises.
18	May worsen the injury only if it is a newly gained one. Otherwise, no effect. But I would recommend to ask your doctor before starting the workout.
22	It depends on each case separately. In some cases it may worsen the injury, in others it may strengthen the muscle and bone.
24	Can potentially cause additional injury/pain.
27	Can make it even worse. Do not recommend it!
29	Nothing bad, injuries in the past heal
30	Negative!

Appendix 16. Summary of expert answers to the question: “Can CHISELL be used by a person wearing braces, invisalign, palate expander orthodontic devices?”

ID	Full Answer: “Can CHISELL be used by a person wearing braces, invisalign, palate expander orthodontic devices?”
1	In my opinion no, I wouldn't recommend it. You can use it after/before wearing those, not during.
2	I would not recommend it to use by anyone :) I think that unless it does not harm the use of the devices, it can be used.
3	I don't recommend it at all, the teeth are already very overloaded. Categorically no!
4	Absolutely not!
5	I would not advise any additional workouts that create pressure while wearing orthodontic devices. But you should consult first with your doctor.
6	I would not recommend it, since the device can be harmed, as a result, its position will be changed; therefore, no recovery effect from it.
7	I think that yes, but a person needs to consult his/her personal orthodontist
8	Not recommended. Teeth supporting structures are already under pressure; it would give more uncontrolled force. As well it could directly harm the appliances by touching it, or it could get stuck in silicone.
9	In my opinion this is most likely the case depending on the use.

10	Orthodontic appliances as the ones mentioned in the question have the idea to move certain teeth to a certain spot in the dental arch. This tooth movement is precisely planned by the orthodontists which is why I think it would be a negative influence on the orthodontic process if the product is used incorrectly by the clients. I would therefore not recommend the usage of the product if the client is wearing braces or other orthodontic appliances and first of all consult with the orthodontist.
11	With invisalign and palatal expander it should never be used. The risk for the orthodontic treatment to fail is too great. When a patient is wearing braces it should usually not be problematic if used correctly. Orthodontists need to know about usage of the device to figure out the reason if something in the treatment goes wrong.
12	In general it is not recommended at all to interfere in any way with orthodontic treatment (braces, invisalign, palate expander, etc.). Treatment is changing muscular structure already and further tension and pressure in muscles can create many problems like failure of orthodontic treatment and or tension problems in jaw and neck muscles and consequent position changes of neck and back.
13	I think it would probably be painful to use a chisel while wearing braces and maybe chisell could damage braces or other orthodontic devices in this case. The client should consult with his/her orthodontist before using the product.
14	I would not recommend it.
15	No, it can break! But with crowns it can be used.
16	I think that if it doesn't harm braces then yes. Otherwise, you will need to replace them all the time.
17	No. It is absolutely not recommended.
18	Yes, but I would not recommend it. It may replace the devices and harm a person's teeth even more.
19	No, when wearing braces, any load on the teeth and muscles is contraindicated.
20	More no, than yes.
21	Each separate case should be evaluated. However, I think that if it does not damage devices, it can be used.
22	I would not recommend it since the product can break devices.
23	I would not recommend it; however, you should definitely consult your dentist.
24	No, since any additional pressure can have a negative effect.
25	I don't think it is a good idea as periodontal tissues would get a lot of pressure because of orthodontic wires, rings (which are put on teeth and might touch gums) and so on.
26	No.
27	If it does not harm any pains – yes. But I would not recommend it.
28	Additional load is not recommended, but if CHISELL does not change the position of the brecc, then it can be used (only if 2 products work mutually!).
29	Not at all.
30	No, it can very easily damage the orthodontic design.

Appendix 17. Summary of experts comments and recommendations

ID	Full Answer for comments and recommendations
1	Further research is needed
2	Deep research and insights are needed to analyze all the potential harms.
5	The product may be very dangerous in case of previous injuries/illnesses.

6	If in everyday life you are experiencing burning pain in the abdomen (pain that travels up the throat) , the sensation of pressure, bloating or fullness, vomiting, diarrhea, weakness, weight loss it is then better to have an appointment with the doctor for check-up. Pregnant women wanting to try the product should first visit the doctor. Moreover, constant chewing should have closer attention to lifestyle habits and the food consumed together with the amount of water which is consumed in a day and physical exercise.
7	Make sure that the client is aware of all potential side effects. Not sure if the product would get medical approval.. still too many threats to the organism.
8	It would be safe to recommend the product for people with intact teeth and good oral health. In any other case they should be recommended to consult with their dentist and evaluate the current condition.
10	<ul style="list-style-type: none"> - Further tests with different patients, age groups and patients with different tooth injuries - Studies with the analysis of radiographs, 3D images and clinical examination for teeth, soft tissue, muscle tissue and temporomandibular joint
11	From a medical standpoint the device could only be recommended when used in logopedics. As it is sold as a beauty product I would never recommend it to any patient because of the problems it could cause in the orofacial region. The region is very sensitive and the training with the device would cause an imbalance in the system.
12	I personally would not recommend the device to my patients, as interfering with the orofacial region in this way (and solely for aesthetic purposes) has the possibility of creating an imbalance in jaw musculature and function and can lead to many problems as described above.
13	Consult your dentist or orthodontist before using Chisell.
14	The product may be swallowed, very dangerous to use! It is necessary to offer kinesiologists, osteopaths, stomatologists for further analysis. For sales, the product is dangerous.
15	If a person has no problems with bite and perfect teeth, then the product should not harm.
16	None injury should stop from the workouts. However, a person should consult his doctor/trainer before starting any new workout. Chisell is a great tool. Looking forward to hearing from you more here in LA.
17	You should mention all medical conditions which may have a negative effect on Chisell usage. It should be done on your webpage or the package you sell the product in.
18	I would recommend you to conduct a huge study with any dental clinic to see all the potential effects. Moreover, get insights from specialists from different fields to be more precise. To answer how much and how that object affects the bone structure and temporomandibular joint, research is needed. In order for chisell to be recommended to humans, those tests should meet certain requirements. Using it for cosmetic purposes can also hurt some. One example of misuse is when people involuntarily grit their teeth at night due to muscle tension without feeling it at all. Reinforcing the massager with the CHISELL would further increase that force, and damage accordingly.
19	If there are no pathologies from the oral cavity and mandibular joint, chewing CHISELL is possible for 10-15 minutes per day.
21	It should be understood that the effect will only be visible with continuous use of this product, the result obtained when you stop using it returns to the previous position. If the consumer notices adverse changes after the use of this product, it is appropriate to discontinue the use of this product.
22	Perhaps, Chisell might force the wisdom teeth to raise
23	You should consult your doctor before using Chisell to know all the specifics of your organism.

24	Hygiene should be a vital part of the product. If it won't be clean all the time, teeth may suffer.
25	I think people should know that if they start using this product, they'll need to use it continually. Masseter muscle is like other muscles - if you stop training it, it will come back to its inner size. And people these days want a very quick and big result and they don't want to work everyday for that :)
26	There are great doubts about the effectiveness of this device, and it also sticks very strongly to the tongue, which gives not the most pleasant sensations and in the future can lead to a solution of the trophic language.
27	Interesting idea, but all the threats need to be analysed, while the customer needs to be informed.
28	Not everyone needs to expand their muscles - problems arise. We need a study for 6 months - 1 year with all possible patients (men and women of different ages, with different bites).