GUARDLAB™

THE SCIENCE OF PROTECTION

ARC™

ALIGNMENT REPOSITIONING CUSHION

TECHNOLOGY

As the emerging leader in sports technology, we have worked with some of the world's most renowned dentists to develop a mouthguard that can help to minimize the risk of concussions for every athlete from Pop Warner to the NFL.

We can achieve this using ARC™ technology.

CAUSES OF CONCUSSIONS

vibrational forces

blow to the jaw

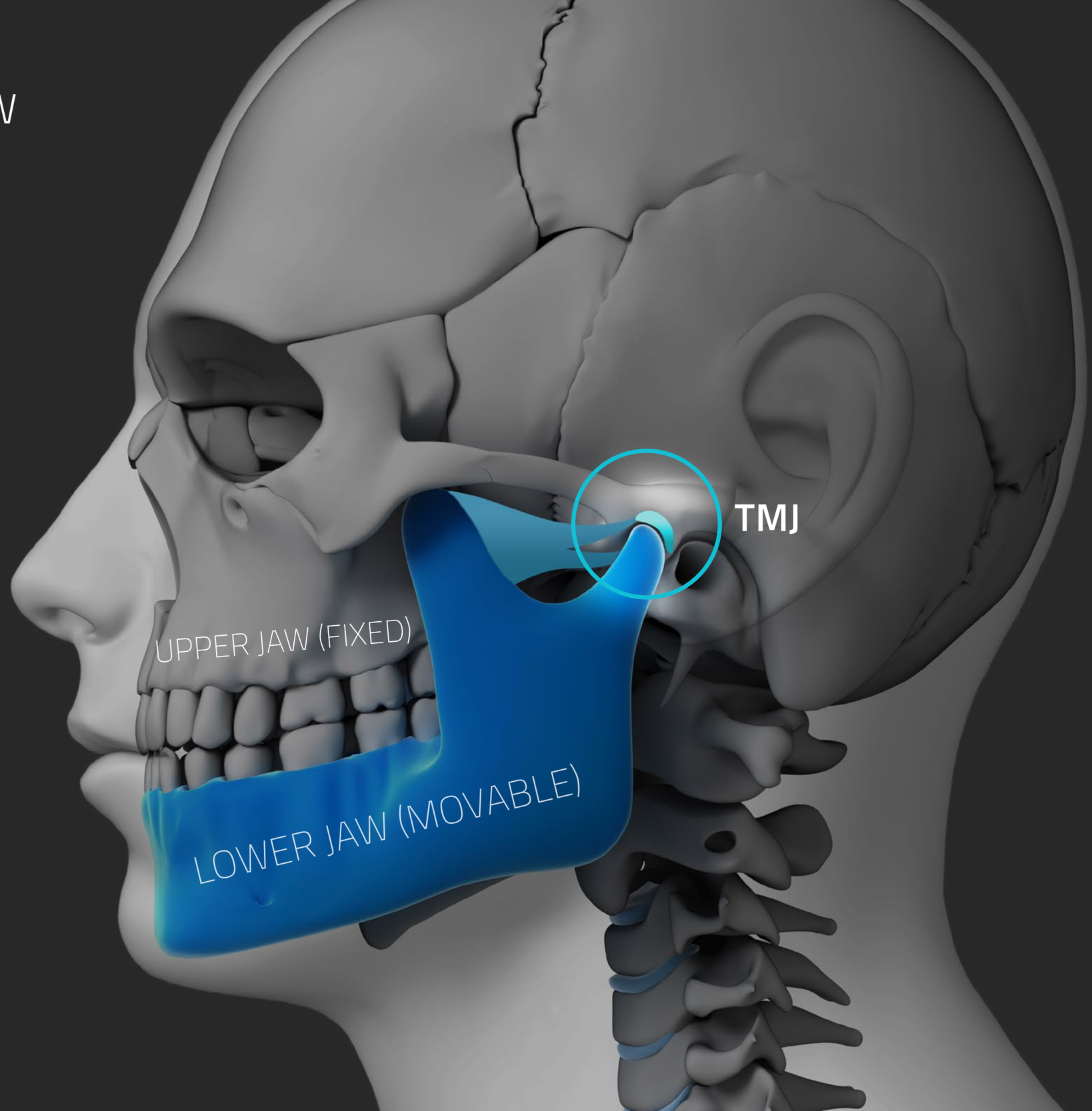
whiplash

strike to the head

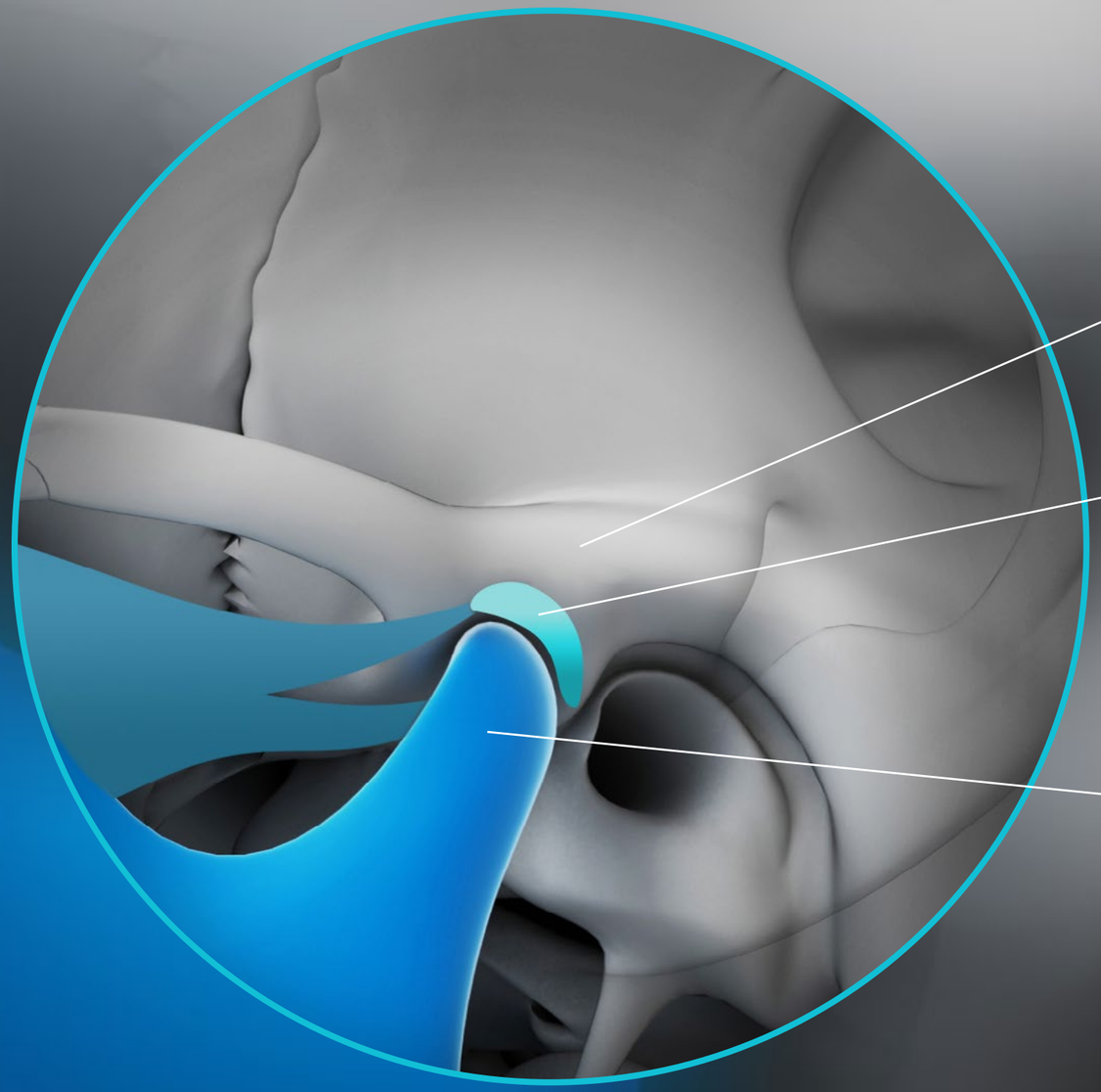
The joint of the lower jaw is called the Temporomandiublar joint, or the TMJ.

The TMJ is the most used joint in the body. The positioning of this complex and unique joint greatly influences the effect that a blow to the jaw can have on the brain.

ANATOMY OF THE JAW



TMJ KEY WORDS



FOSSA WALL
thin plate of bone

DISC
connected to sensitive tendons, nerves and blood vessels. The Disc moves along with the Condyle. When opening and closing, Disc separates Condyle from Fossa Wall

CONDYLE
top of the mandible bone

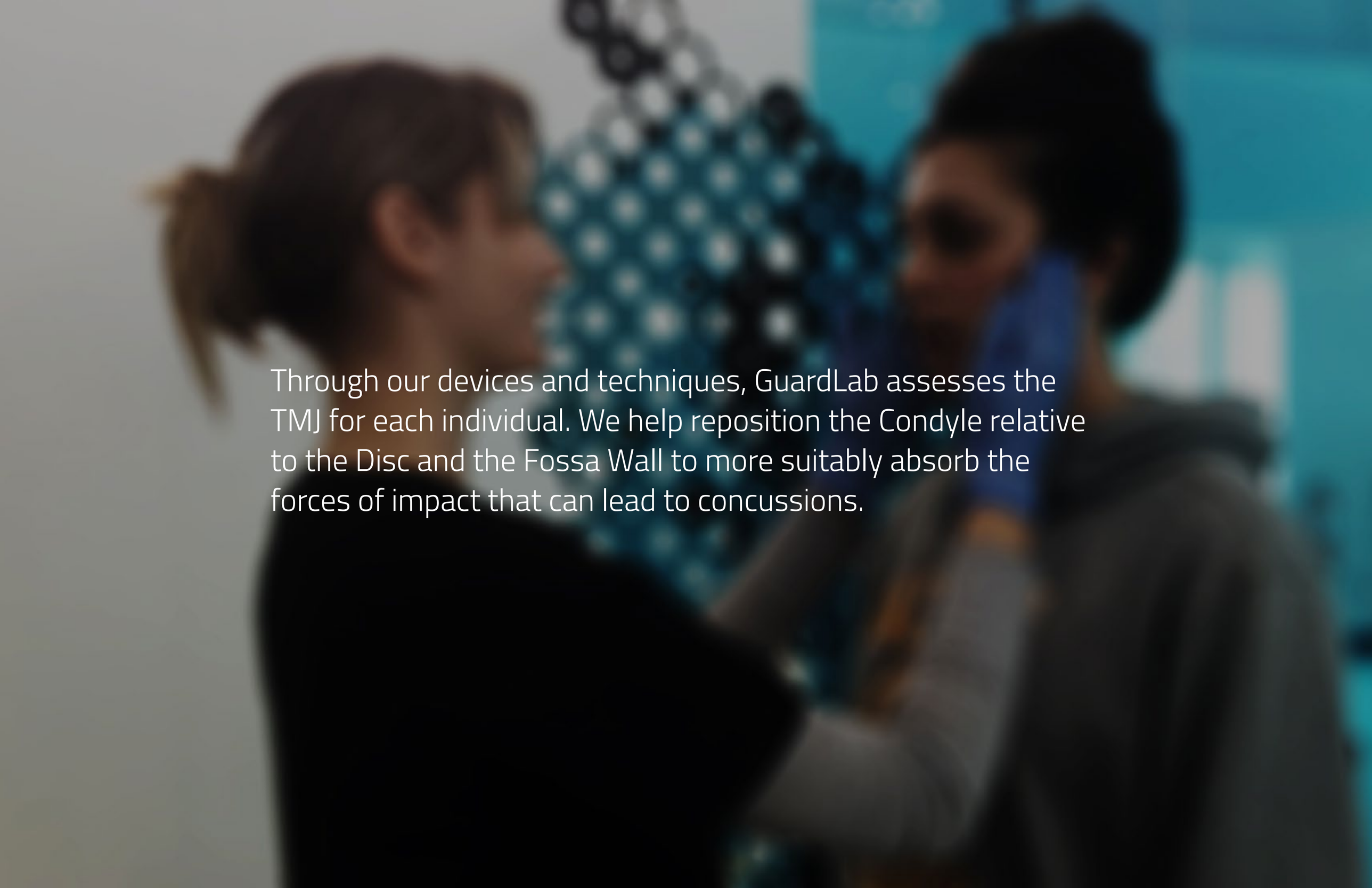
The position of the Condyles relative to the Disc and Temporal Fossa can have an effect on the brain when there is a blow to the jaw.

This is because the Condyle is in proximity to an important part of the brain, the **Temporal Lobe.**

THE HUMAN BRAIN

TEMPORAL LOBE

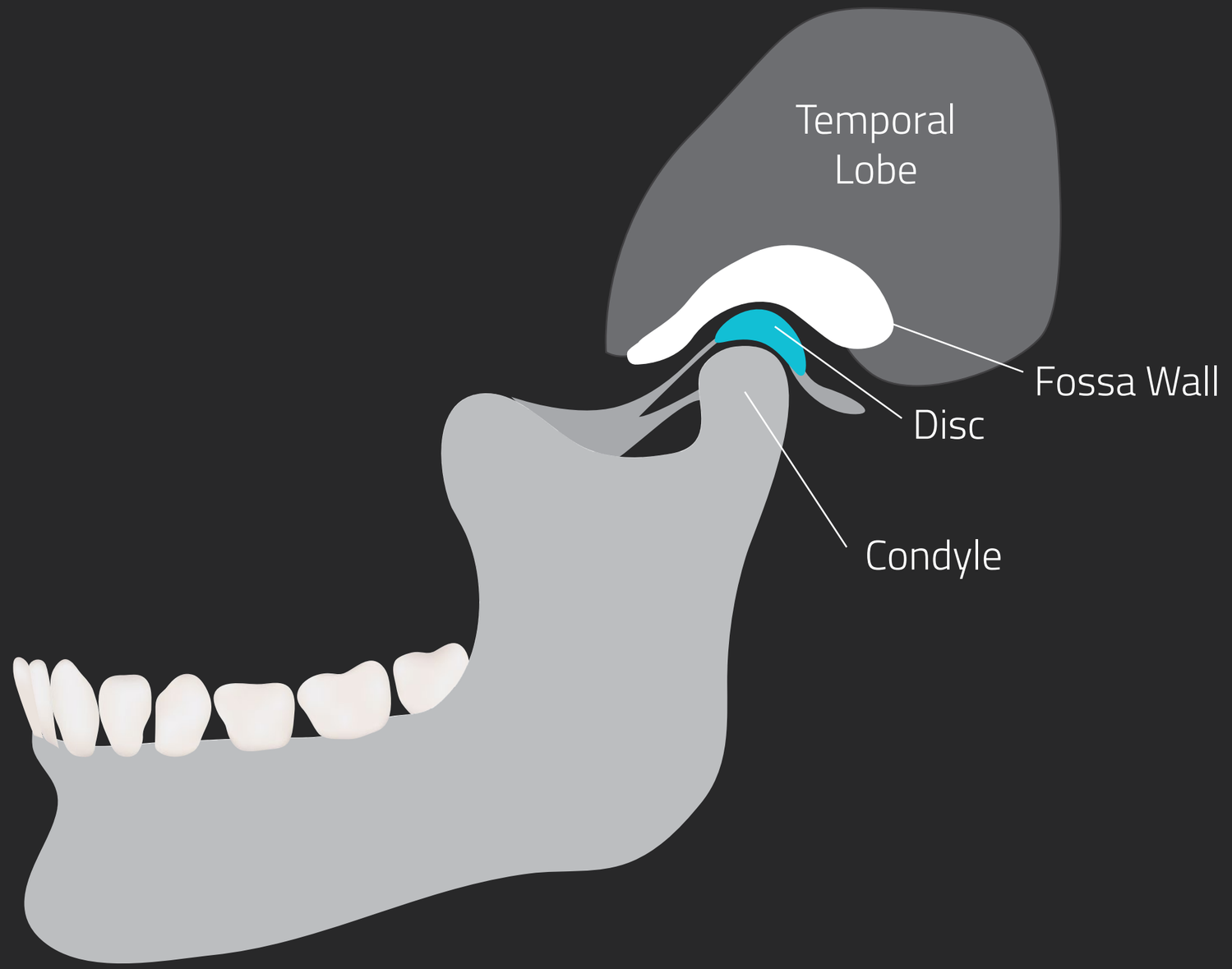
One of the four main regions of the cerebral cortex. The temporal lobe plays an important role in organizing sensory input, auditory perception, language and speech production, as well as memory association and formation.



Through our devices and techniques, GuardLab assesses the TMJ for each individual. We help reposition the Condyle relative to the Disc and the Fossa Wall to more suitably absorb the forces of impact that can lead to concussions.

This is an average jaw.

(take note of the condyle & disc)



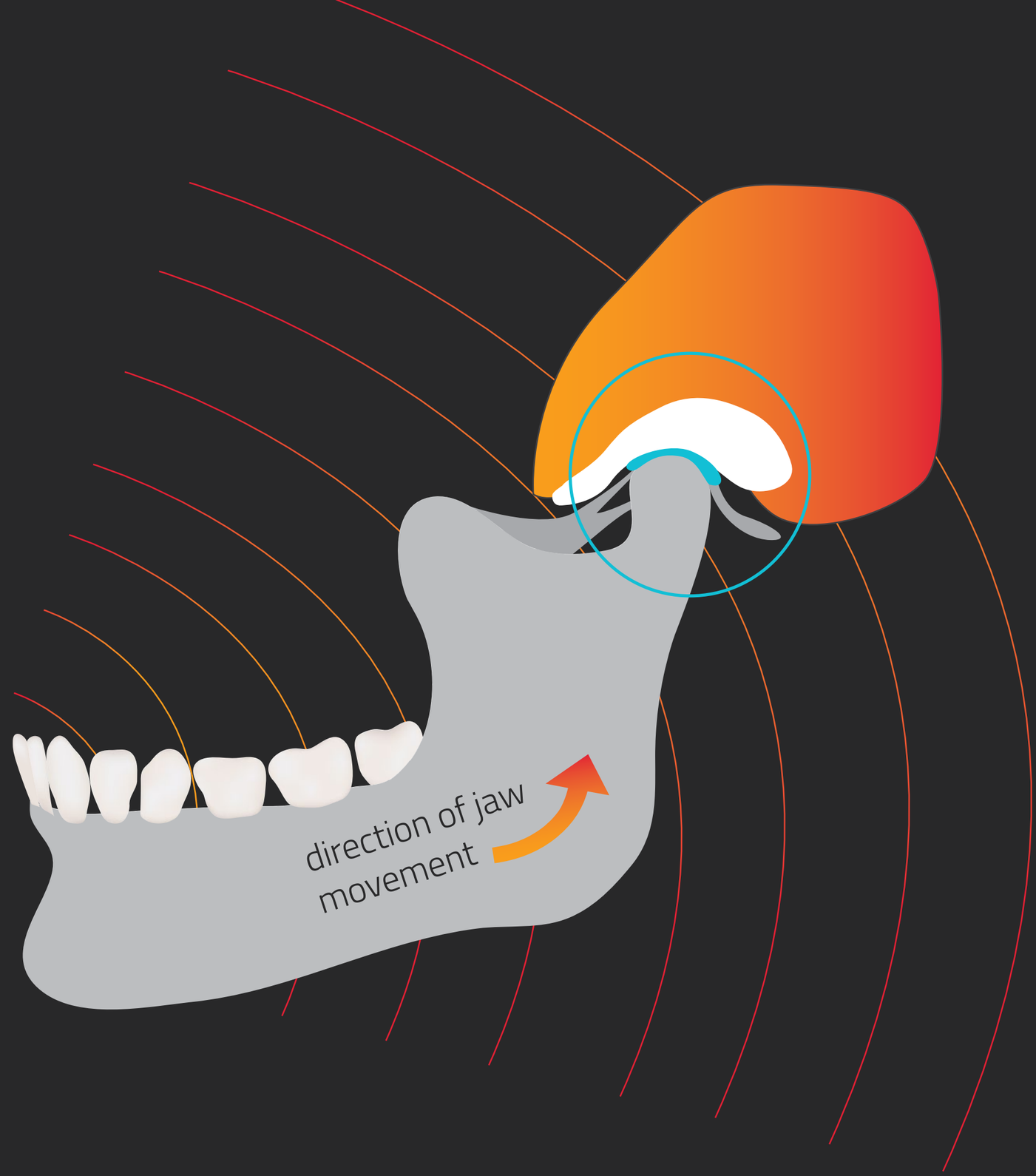
Average jaw with **no mouthguard**
on impact

RESULT
Crushing of Disc against the Fossa Wall, major shock waves transmitted to brain

1 | no cushion between teeth absorbing shock

2 | teeth are not locked into proper alignment position and jaw is free to move

3 | no stability of neck muscles (proven)



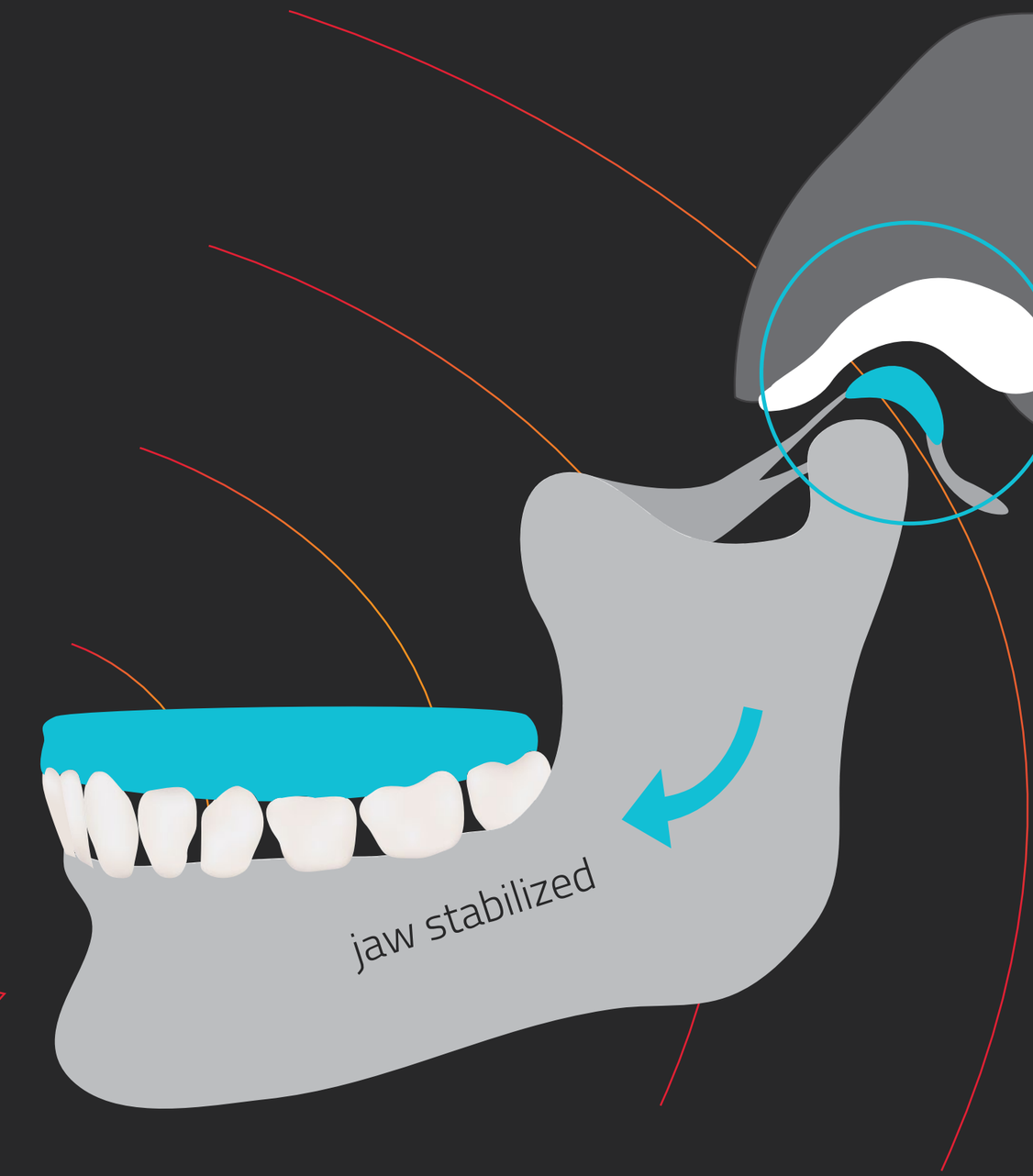
Average jaw with **GuardLab**
on impact

RESULT
Increased distance of travel between the Condyle and the Fossa lessens the likelihood of the Condyle striking the Fossa Wall.

1 | ARC™ absorbs shock

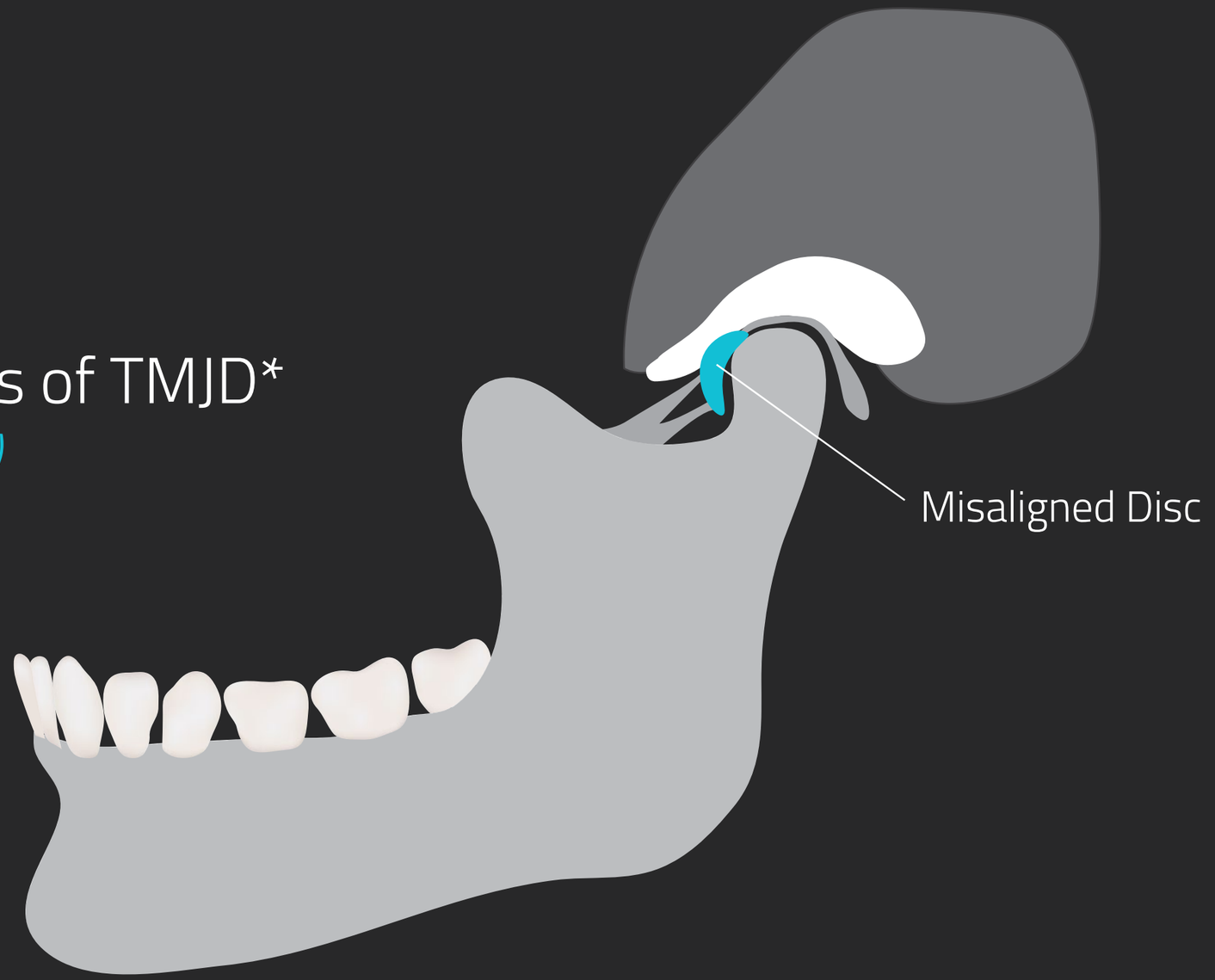
2 | teeth are locked into proper alignment position, stabilizing the jaw

3 | neck muscles stable (proven)



This is a jaw with symptoms of TMJD*

(temporomandibular joint disorder)



* The AGD estimates that more than 10 million Americans suffer from TMJD. Additionally, the TMJ Association predicts that as much as 65 to 85 percent of the U.S. population will experience some type of TMJD symptom in their lifetime.

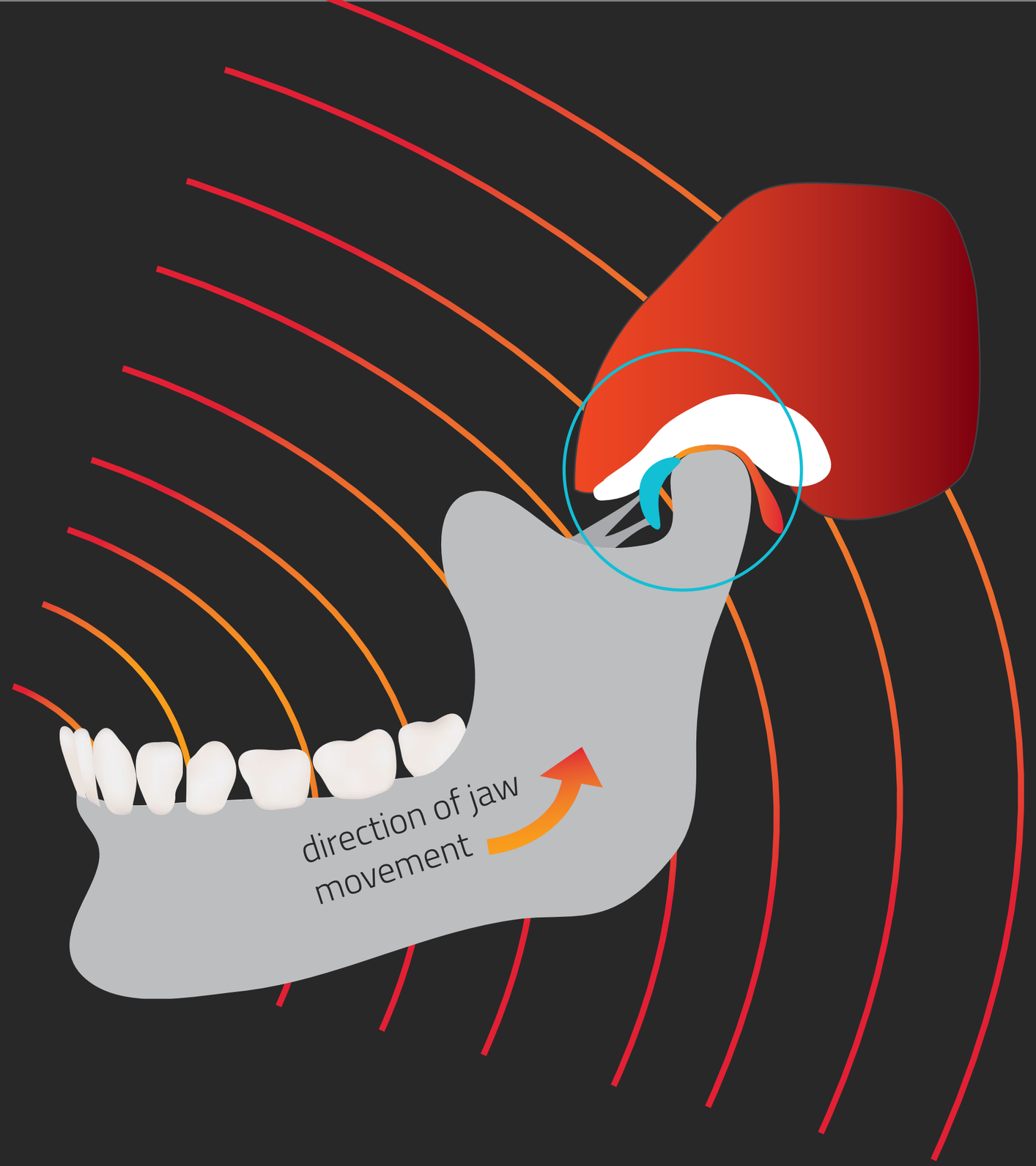
TMJD jaw with **no mouthguard**
on impact

RESULT
Impact forces crush nerves and blood vessels causing a neurological impingement or “zinger” effect.

1 | disc is not positioned to cushion the impact

2 | condyle is not aligned relative to the disc and fossa

3 | nerves and blood vessels that feed the disc are compromised



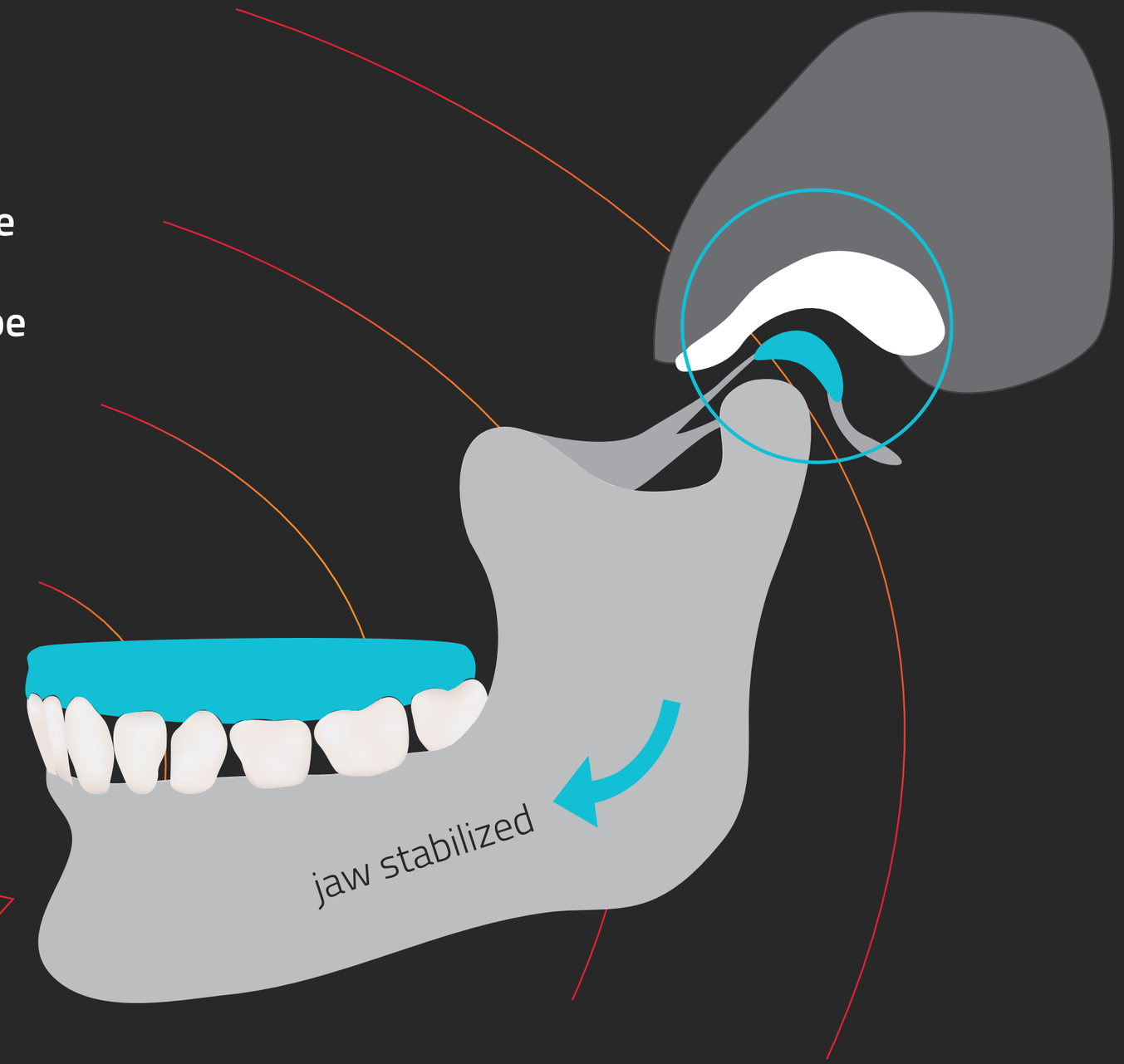
TMJ jaw with **GuardLab**
on impact

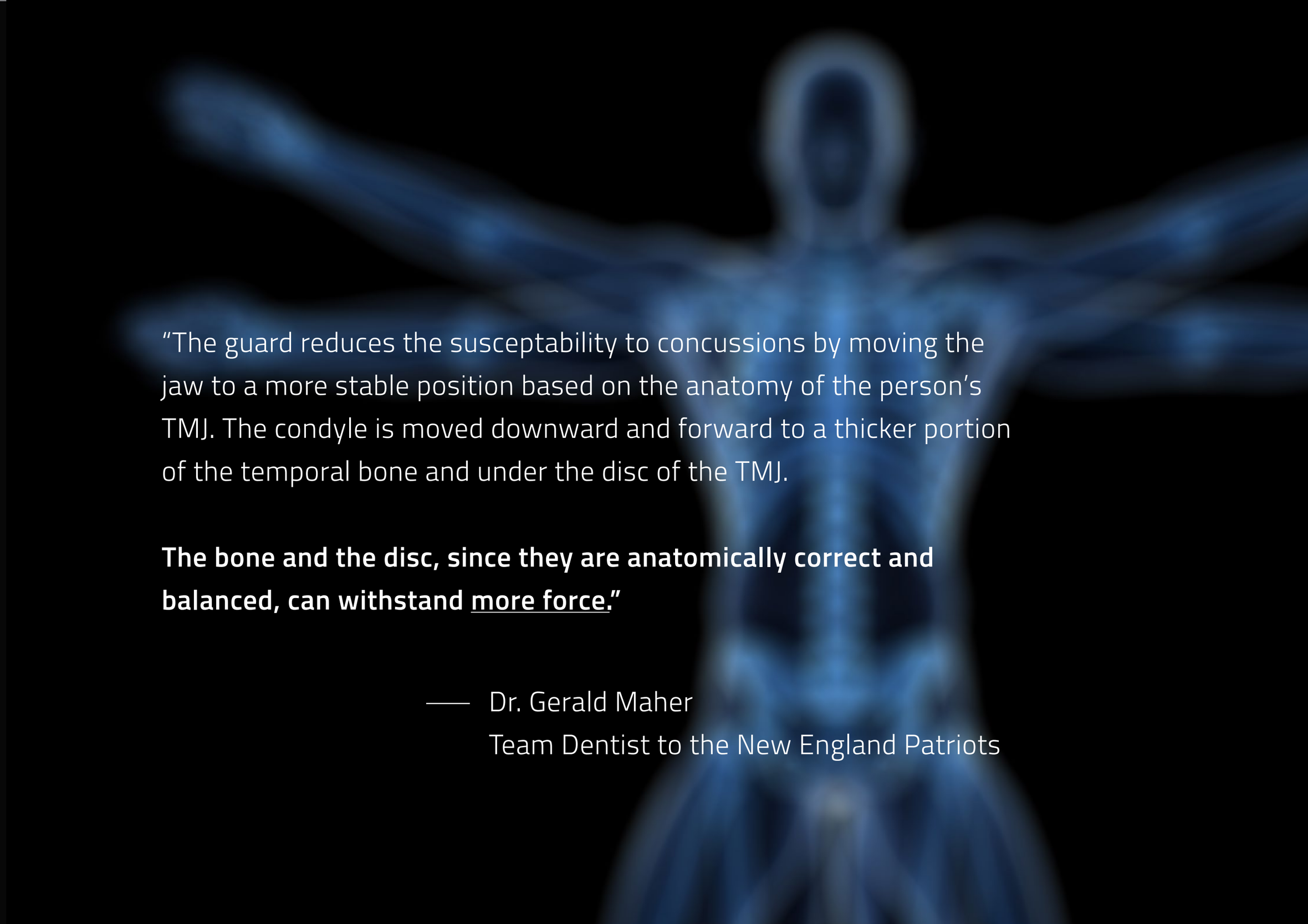
RESULT
The joint decompresses when jaw shifts into ARC™ bite. This allows the Disc to move into a more favorable position to protect the Temporal Lobe from impact forces applied by the Condyle striking the Fossa.

1 | ARC™ absorbs shock

2 | teeth are locked into an ARC bite, allowing the proper alignment and stabilization of the jaw

3 | neck muscles stable (proven)





“The guard reduces the susceptability to concussions by moving the jaw to a more stable position based on the anatomy of the person’s TMJ. The condyle is moved downward and forward to a thicker portion of the temporal bone and under the disc of the TMJ.

The bone and the disc, since they are anatomically correct and balanced, can withstand more force.”

— Dr. Gerald Maher
Team Dentist to the New England Patriots

WITH

GUARDLAB™

The Condyle is positioned further away from the Fossa and the brain. This causes less impact force and better absorption of forces because the disc is in a more favorable position.

01

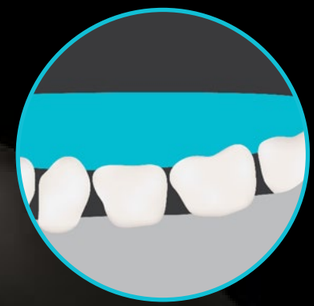
ALIGN

We identify a TMJ issue, and align the jaw into the correct position

02

REPOSITION

We reposition the jaw to increase the distance between the Condyle and the Fossa



03

CUSHION

We engage the teeth in individually designed shock absorbing material

ARC™ TECHNOLOGY

GUARDLAB™

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