

**THE ROLE OF
WARMING UP AND
COMPRESSION
ON GAMING PERFORMANCE**

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Whether individuals are involved in the competitive or casual side of gaming, warming up can provide significant performance and health benefits. To prepare for competitions and practices, athletes in traditional sports engage in rigorous warm-up routines.

Additionally, compression garments are also widely accepted as a recovery intervention. Gamers can benefit from understanding and applying these principles to excel in their virtual endeavors.

This white paper aims to shed light on the science behind warming up and compression, and how adopting wearable technology can elevate gaming performance.

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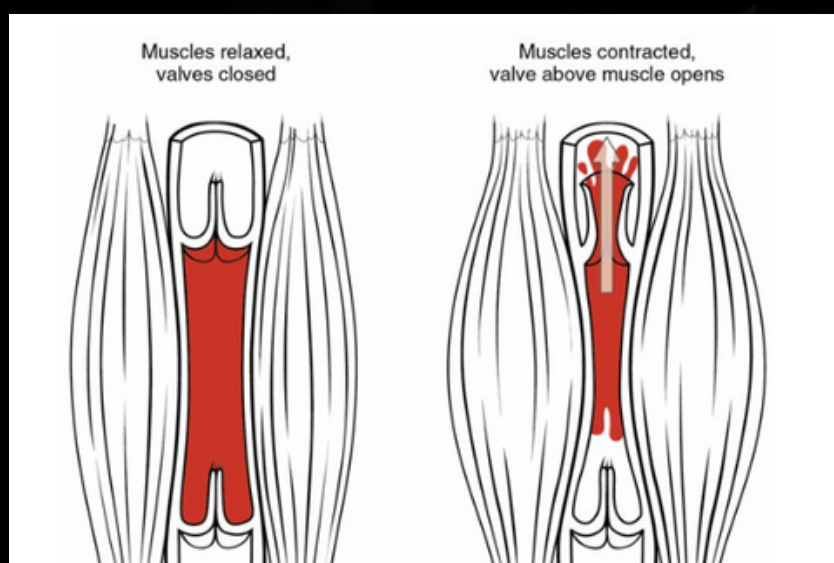
SCIENCE OF WARMING UP

Warming up is a crucial preparatory activity that improves physiological and cognitive readiness for gaming.

Traditional warmups consist of range of motion exercises, stretching or light activations of the intended structures.

Passive warmups can also be performed, which involves heating the structures via external sources and can also provide some of the same benefits.

By activating the muscles prior to competition, blood flow and muscle temperature are increased resulting in flexible structures more resistant to injury that respond with more dexterity¹.



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ACTIVE WARM UP

Active warm-ups involve gaming-like physical activity that activates muscles, improves reaction times, and enhances focus. Static stretching can temporarily decrease strength, so dynamic movements that stretch muscles fully are preferred in some cases².

PASSIVE WARM UP

Passive warm-ups increase muscles temperature externally. Active warm-ups heat muscles by blood and thermogenesis. Passive warm-ups simulate this effect by applying heating pads, warm immersions and saunas.

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First used by the medical industry, compression garments apply pressure to the musculature. Proponents of this technology point to increased blood flow and oxygen delivery and improved proprioception as reasons to utilize it during exercise.

Proprioception is the body's ability to sense its position and movement, and compression garments may enhance this feedback. This heightened awareness of body positioning can potentially improve movement efficiency and coordination during physical activities.

Compression is also linked to recovery. It aids in the flow of lymphatic fluid, helping to clear metabolic waste products and reduce swelling and inflammation in the muscles³.

Extrapolating these results to gaming, compression garments can provide a positive benefit to performance.

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GAMING AND WARMING-UP

In gaming, the understanding and implementation of warming up is not universal. Professional players may have a variety of physical and mental warmups they utilize, but casual gamers may not prioritize an activity that takes time away from gaming that may already be limited.

Most individuals may just accept that it takes them one or two matches to reach peak performance and consider early gameplay their warm-up.

However, there is a noticeable difference in gameplay during those early games. As a result, identifying a reliable source of passive warm-up that can reproduce the benefits of active warm-ups can not only improve performance, but potentially decrease injury rates later in life^{4,5}.

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Although passive warmups have been utilized successfully by traditional sports for quite some time, the research and effect is not as pronounced in gaming.

However, new data shows that wearing an external heated glove can improve gaming performance.

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STUDY DESIGN

A new study evaluated whether utilizing a passive heating & compression source (Magma Glove) to the dominant mouse hand would improve performance in a popular aim trainer (Aim Lab).

Nine participants played a total of ten rounds of Gridshot in AimLab, a popular game mode that tests both speed and accuracy while aiming.

Five rounds were played as a control wearing the Magma Glove, but with the heating option turned off.

After a one hour break, five additional rounds were played with the Magma Glove heating option turned on. Three outcomes were measured and compared between individual participants: performance (kills per second), effort (shots taken) and accuracy.

Data was analyzed using a two-way ANOVA.

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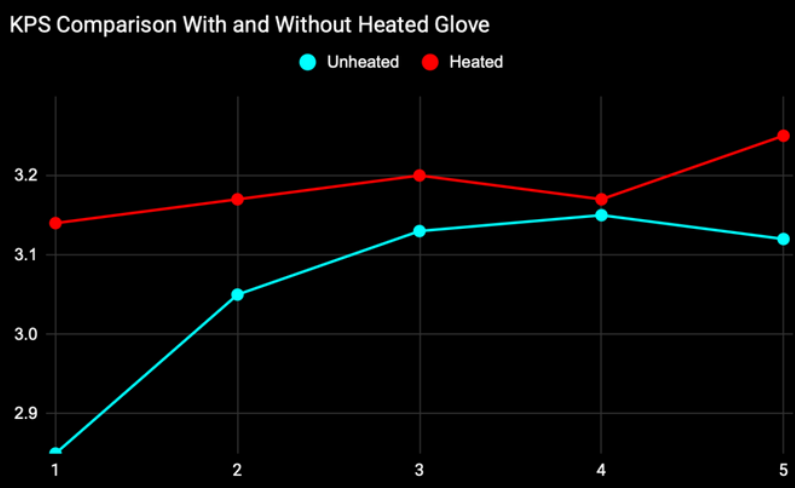
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Across the board all individuals improved as more games were played.



When compared to not utilizing the glove, participants wearing the Magma Glove had improved kills per second and total shots in the beginning of the session.

This effect dissipated and equalized as game time extended. Taken in conjunction, this suggests that utilizing the Magma Glove simulates the physiological effects of an active warmup and allows players to achieve better performance earlier when compared to non-usage.

Additionally, participants using the glove exhibited more effort, as exhibited by an increase in total shots fired.

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KEY TAKEAWAYS

This research indicates that the use of the Magma Glove can potentially unlock new dimensions of gaming performance, including improved dexterity, reaction times, and endurance.

Embracing wearable technology such as warming and compression gloves offers a novel approach to optimize gaming preparation, leading to better gameplay and elevating the overall gaming experience.

As gaming wearable technology evolves, we anticipate even greater advancements in enhancing gamers' performance, fostering a new era of competitive excellence in the gaming world.

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