

GAMER'S HEALTH GUIDE

Developed by Cleveland Clinic Esports Medicine





Once considered just a hobby, **competitive gaming** has evolved into a multibillion-dollar industry and viable career path. Careers in gaming can begin with streaming and content creation, and later involve joining professional teams and earning endorsements.

The shift is associated with a massive surge in financial support and competition within the gaming industry. A performance advantage is a must in a competitive market like esports.

At Cleveland Clinic, our approach to esports is different from others in the industry. We look at performance from a holistic, “whole gamer” perspective.

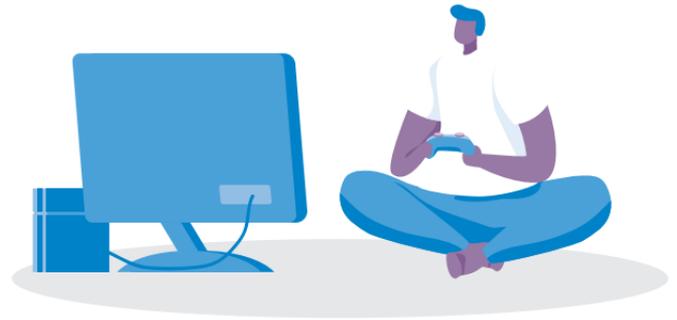
OUR APPROACH TO CARE

The “whole gamer” approach to performance and injury prevention involves numerous factors that affect gameplay, including: ergonomics, nutrition/hydration, sleep, exercise/movement, mental health and self-care.

If an injury occurs, rest alone is not the best avenue for true recovery. Managing the tissue load coupled with other active recovery practices are key for short-term return and long-term prevention.

Movement can help prevent overuse injuries, limit pain and improve mental performance all while participating in-game. Whether you enjoy running, resistance training or yoga, we advise you to move.

Our team recommends taking movement breaks every 30-45 minutes for one to two minutes, and every two hours for more than five minutes.



OUR TEAM



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MANAGING TISSUE LOAD

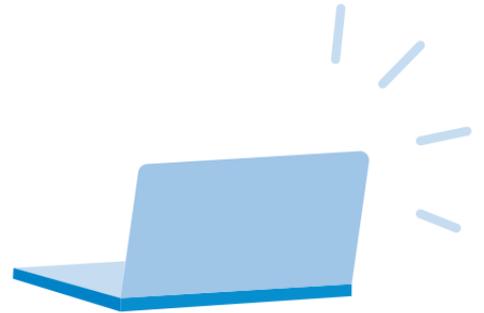
Tight, sore, burning muscles usually are due to increased demand on the tissues.

Managing tissue load during play can allow a gamer to continue doing what they love and begin the recovery process for those affected tissues.

Rather than simply resting injured tissues and stopping play entirely, we want to build tissue endurance. Ideal management of these injuries is similar to traditional sports:

- › **Identify structures affected.**
- › **Identify movements that drive the pain during play.**
- › **Adapt play to participate pain-free.**

Activities designed to aid recovery can include mobilizing tight joints and muscles while strengthening and stabilizing overworked joints and muscles.



 Cleveland Clinic | Gaming Ergonomics for Esports Athletes

20-20-20 Rule for Screen Use

20

Take a 20-second break

20

every 20 minutes

20

to look at something 20 feet away.

Anatomic Alignment

Monitor: Eye level aligned with the upper third of screen

Head: Ear aligned over shoulder

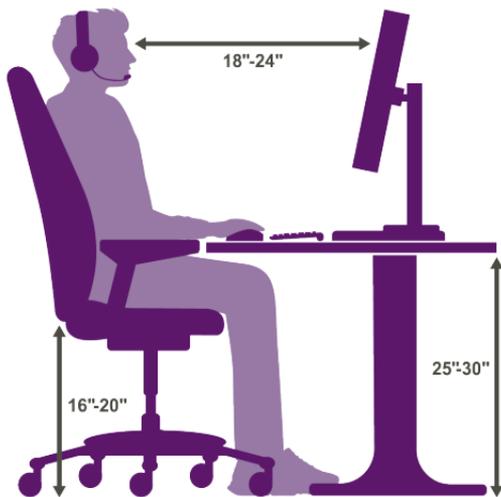
Shoulder: Relaxed position with no shrugging

Forearm: Supported by desk or, ideally, chair armrests

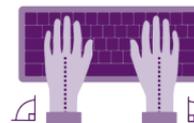
Spine: Supported against the backrest with lumbar support

Hip/Knee: Thighs supported, knees bent slightly > 90°

Feet: Flat on the floor or supported by a footrest



Mouse and Keyboard



Mouse

- Consider using an ergonomic or vertical mouse.

Keyboard

- Keep keyboard flat and at the midline of the body.

The 90° Wrist Rule



- The intersection between the wrist and hand should be 90° in all planes.

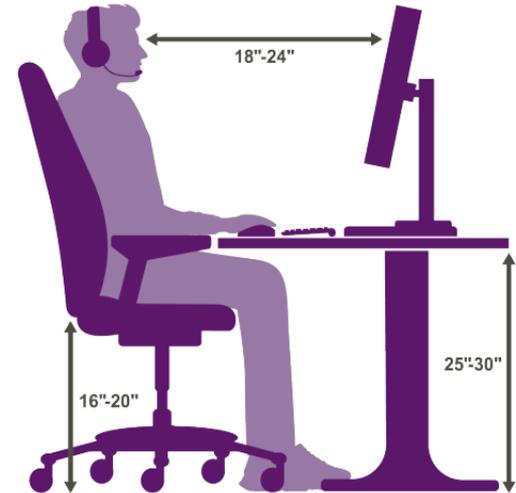
- Be mindful of wrist deviation in x, y and z planes of motion.

20-20-20 RULE FOR SCREEN USE

Take a **20-second break**
every **20 minutes**
to look at something **20 feet away**.

ANATOMIC ALIGNMENT

Monitor	Eye level aligned with the upper third of screen
Head	Ear aligned over shoulder
Shoulder	Relaxed position with no shrugging
Forearm	Supported by desk or, ideally, chair armrests
Spine	Supported against backrest with lumbar support
Hip/Knee	Thighs supported, knees bent slightly $> 90^\circ$
Feet	Flat on floor or supported by footrest



GENERAL MOBILITY

Gamers typically suffer from spine, hip and shoulder stiffness as well as mobility issues from prolonged sitting during practice or play. Stretching and mobilization of tight joints and muscles are critical for performing your best.

Mobility starts at the spine. Use an exercise ball to promote mid-back extension and low-back decompression.

Your hips and shoulders are very mobile joints, but sitting for long periods of time engages muscles on one side of a joint but not the other. This leads to sore muscles and difficulty moving in a normal, pain-free motion. Mobilizing tight muscles and strengthening stabilizing muscles around a joint can bring relief.

Stretching and mobilization of tight joints and muscles are critical.

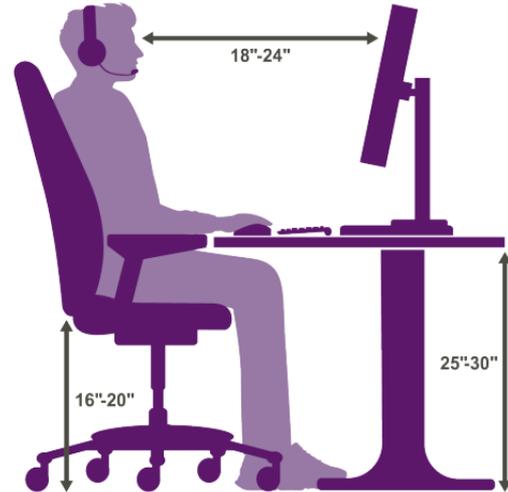
ERGONOMICS

CHAIR SETUP

Set your backrest at slightly greater than 90 degrees to prevent back pain throughout the day.

Sit in a chair made of mesh to allow for temperature control while still supporting your back. The chair design should have a curve for your lower back. You also can place a rolled towel behind your back.

Your chair's distance from the desk will depend on the supporting structures (e.g., armrest, desk surface) you use while gaming.



ERGONOMICS *continued*

ARMRESTS

Armrests can be used during gameplay, but most gamers will rest their arms on the desktop.

Your chair should be under the desk as much as possible, for more support.

Desk height should allow your shoulders to be in a neutral position.

If you use armrests, those that can be adjusted in three planes are best.



MONITOR SETUP

Typically, the monitor distance is arm's length away, but this will vary among gamers.

The upper third of the screen should be at eye level and directly in front of you.

Screen brightness should match the brightness of the room.



ERGONOMICS *continued*

PERIPHERAL SETUP

Place the keyboard in front of you and keep your wrist in a neutral position. Limit the tilting of your wrist (to the pinky side or thumb side).

Your keyboard should be flat, with no tilt. It should be free from the number pad, if unused.

Your mouse should be in close proximity to the keyboard. Use a mouse pad to decrease friction on the desk surface.

The mouse should fit your hand. You may need to test multiple sizes. The mouse also should be game-specific so you can be efficient with movement.

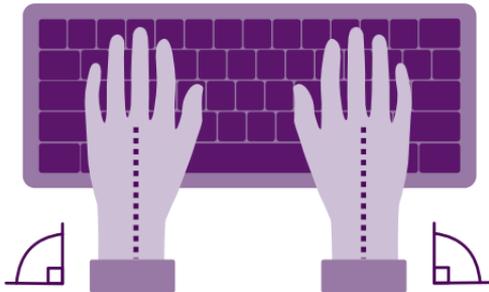
The controller should rest on your lap or be supported on the desktop in a neutral position.



ERGONOMICS *continued*

THE 90° WRIST RULE

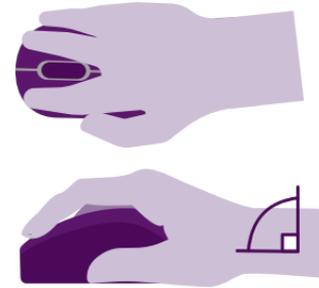
- › The intersection between the wrist and hand should be 90° in all planes.
- › Be mindful of wrist deviation in x, y and z planes of motion.



MOUSE AND KEYBOARD

Mouse

- › Consider using an ergonomic or vertical mouse.

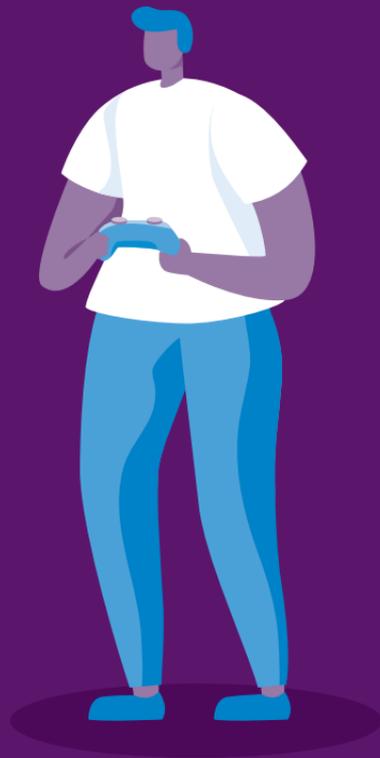


Keyboard

- › Keep keyboard flat and at the midline of the body.



STABILITY, MOBILITY & POSTURE



STABILITY, MOBILITY AND POSTURE

UPPER BODY

Your shoulders should be close to your body, not rotated to the inside or outside.

Your arms should be in a relaxed position on the armrests or desk surface.

Your wrists should be in a neutral position, both horizontally and vertically.



STABILITY, MOBILITY AND POSTURE *continued*

LOWER BODY

The angle of your hips to your lower back should be more than 90 degrees to relieve the supporting structures of your back.

Knee angles should be greater than 90 degrees to prevent prolonged contraction of your hamstrings.

Set your feet flat on the ground or a footrest for optimal stability and support.

Fidgeting your feet is encouraged. It helps to vary the position of your lower body.



STABILITY, MOBILITY AND POSTURE *continued*

NECK | SHOULDER

Your neck and shoulders are intertwined when it comes to gaming. In the typical forward-leaning posture, you may develop chronic neck tightness.

Headaches can occur due to muscle imbalance.

Our goal is to add mobility to your tight muscles while adding stability to your overstretched or weak muscles.



STABILITY, MOBILITY AND POSTURE *continued*

HAND | WRIST

Trigger points, burning and numbness/tingling can occur with extended periods of gaming.

Most numbness and tingling are due to inflammation and repetitive stress on soft tissues. Rarely is your actual nerve the issue.



STABILITY, MOBILITY AND POSTURE *continued*

TRUNK | SPINE

Core stability

- › Gluteal bridge progression
- › Pallof exercises
- › T pushups
- › Bird dogs
- › **Side planks**



STABILITY, MOBILITY AND POSTURE *continued*

TRUNK | SPINE

Spine mobility

- › L/S decompression via ball
- › T/S extension mobility via ball
- › Lateral support bend via ball
- › **Cat camels**
- › Child pose to cobra



STABILITY, MOBILITY AND POSTURE *continued*

NECK STABILITY

Neck engagement

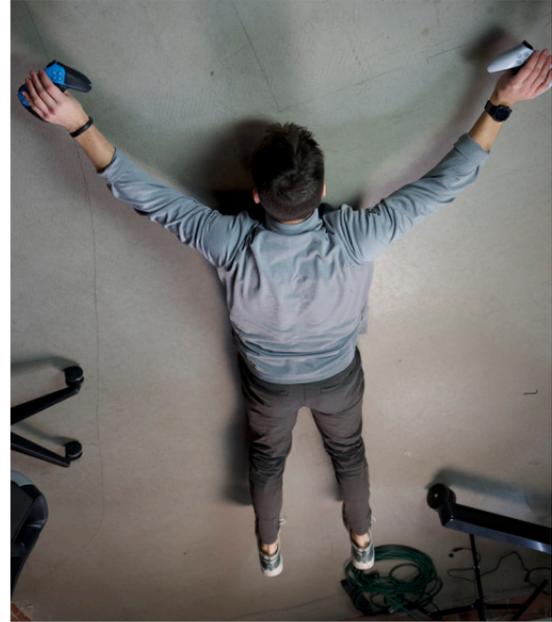
- › Chin tucks, chin tuck roof of mouth
- › Towel stretch
- › **Deep neck flexor**
- › ROM C/S
- › Trap/Levator sit-on-hand stretch



STABILITY, MOBILITY AND POSTURE *continued*

POSTERIOR CHAIN ACTIVATION

- › Swimmers
- › Donkey kicks
- › Supine planks
- › Supermans
- › **TYIs**
- › Scap-pinch in/down



STABILITY, MOBILITY AND POSTURE *continued*

HIP | LOWER EXTREMITY

Hip mobility

- › Leg swings
- › Hip lunges
- › Butterfly/Lotus
- › Figure 4 stretch



STABILITY, MOBILITY AND POSTURE *continued*

HIP | LOWER EXTREMITY

Lower extremity activation

- › Open the gates
- › Leg swings
- › Squat progression
- › Romanian deadlifts (RDLs)
- › **Wall sits**



STABILITY, MOBILITY AND POSTURE *continued*

HAND | UPPER EXTREMITY

- › Hand blossoms
- › **Assisted flex/extend stretching**
- › Lumbricals stretch
- › Weighted wrist extensions
- › Rubber band assisted extension/abduction strengthening
- › Thumb and finger flexion strengthening



STABILITY, MOBILITY AND POSTURE *continued*

PREGAME | MID-GAME

Pregame

- › Open gates
- › Hand blossoms
- › Donkey kicks
- › Dynamic/static finger stretches
- › Wrist rolls
- › **Arm circles modded**



STABILITY, MOBILITY AND POSTURE *continued*

PREGAME | MID-GAME

Mid-game

- › Brueggers exercises
- › Cobra to child pose
- › T pushups or modded (person dependent)
- › Chin tuck/C/S AROM

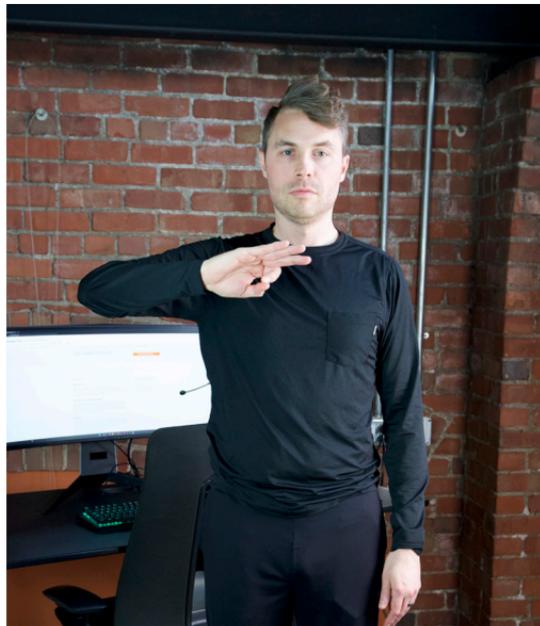


STABILITY, MOBILITY AND POSTURE *continued*

POSTGAME | RECOVERY

Postgame

- › Nerve glides
- › Massage gun work
- › Hamstring work, seated
- › Static stretching of wrist and forearm
- › Wall/doorway stretch
- › Spinal mobility component



STABILITY, MOBILITY AND POSTURE *continued*

POSTGAME | RECOVERY

Recovery

- › Hip opening
- › Glute engagements
- › Anterior chest openers
- › Scap activation
- › **Head-on-a-string**
- › Flexion and extension assisted wrist stretching



CARDIORESPIRATORY FITNESS

Cardiorespiratory fitness **measures how well your body can transport oxygen to your muscles during exercise. It also defines how well your muscles can extract and use oxygen for activity.**

Heart rate variability (HRV) is a measurement of change between heartbeats. It can be a tool to understand the demand activity places on your body/muscles. A low HRV signifies that your body is stressed and would benefit from a recovery period to return to peak performance.

By measuring HRV (using a smart device to track heart rate) during practice and play, you can better schedule breaks to optimize your performance, just as athletes in movement-based sports do.



CARDIORESPIRATORY FITNESS *continued*

Research in esports and the general population has shown that just 20-30 minutes of cardiovascular exercise each day can improve physical and mental performance/speed. It mobilizes nerve mechanisms within the body, making them more efficient.

Prolonged sitting may alter brain blood flow, affecting your cognitive function and performance. A decrease in cognitive function decreases executive functions of the brain, including focus and decision-making.

Additional research evaluated the effects of high-intensity interval training (HIIT) versus moderate-intensity exercise on piano practice and performance. HIIT exercise was associated with increased fatigue and potentially decreased performance. Moderate-intensity exercise was associated with improved performance.

NUTRITION

Importance of a healthy diet

Quality fuel in =

Quality performance out

Good nutrition increases energy, concentration, focus and mental endurance to perform at higher levels longer. It also increases overall life expectancy and improves healing processes within the body.

Recovery is faster, and “crashes” between competition days are decreased with a proper diet.

Limit large meals and processed or heavy foods at least two hours before competition to prevent that tired feeling.



Healthy snacking

Snacking between games or prior to competition is a great way to fuel while keeping the amount light. The key is making healthy choices.

Healthy savory snacks include:

- › Roasted almonds
- › Veggies and hummus
- › Hard-boiled eggs
- › Popcorn

Healthy sweet snacks include:

- › Fruit and almond butter
- › Dark chocolate (70% cacao or more)
- › Frozen fruits
- › Smoothies (be aware of unhealthy add-ins)

HYDRATION

Keep hydration available at all times by keeping a dedicated water bottle at your desk. Drinking up to 2 liters of noncarbonated and noncaffeinated drinks **can contribute to better recovery** after practice or competition.

Set reminders for water breaks. Smart water bottles can help keep you on the right track.

Consume water throughout the day, not just when you feel thirsty. Infuse water with slices of lime, lemon, pineapple and other fruits.

Consume water throughout the day, not just when you feel thirsty.

CAFFEINE

Caffeine intake is best **15-30 minutes before** game time.

Drink no more than two caffeinated drinks daily.

Limit caffeine after 2 p.m. so it doesn't affect your night's sleep.

Limit sugar intake associated with most energy drinks. Watch the added amount of sugar in coffee-based drinks as well.

**Limit caffeine after 2 p.m.
so it doesn't affect your
night's sleep.**

SUPPLEMENTS

For sleep, one hour before bed, take:

- › **Melatonin 1-3 mg**
- › **Magnesium 300 mg**

Lutein may have anti-inflammatory properties for eye health.

L-theanine has been shown to have positive effects on cognitive function, including concentration and reaction time.

Turmeric may have anti-inflammatory properties.

Vitamin B assists in brain function.

Turmeric may have anti-inflammatory properties.

SLEEP

Importance of healthy sleep

Sleep is often undervalued when it comes to esports. Performing at your mental peak requires you to recharge properly in sleep and the habits surrounding sleep.

Lack of sleep has been shown to decrease the ability to process information, increase tilt-ability and decrease reaction time, among other performance factors.

Quality sleep also enables gamers to retain more of the knowledge picked up during training or scrimmages.

Sleep hygiene and habits

Blackout shades can limit light coming into your bedroom.

A noise machine can help limit auditory distractions and provide steady ambient noise.

Cooler temperatures in the bedroom have been shown to promote a more restful sleep compared to warmer temperatures.

Exercise is crucial for mental performance as well as providing exertion for better sleep at night. However, exercise later in the day may inhibit your ability to fall asleep.

Red/Blue light exposure

Blue light has a bad reputation. However, blue light is critical for alertness and proper light/day cycles in the early half of the day.

As the day progresses, there should be a gradual shift to more red light. This means changing devices to red shift or limiting the use of devices.

Blue light computer glasses have shown some promising results, limiting blue light exposure for computer users.



MENTAL HEALTH IN ESPORTS

Stress is a healthy and normal part of competition as well as daily life. However, increased stress and/or anxiety **can lead to unhealthy challenges** that can affect your mental and physical performance.

An unhealthy change in your stress level may increase fatigue and the necessary recovery time, all while decreasing performance.

We use a team approach to mental wellness, teaching coping strategies and techniques to optimize your performance in life, not just gaming.

Gaming has been shown to provide a sense of community, relieve stress and increase life satisfaction. It also can help improve communication skills, cognitive ability, hand-eye coordination, rapid decision-making and team-building skills.

However, we must be realistic about the downsides as well. We have seen increases in anxiety, depression, burnout and social isolation due to gaming.

MENTAL HEALTH IN ESPORTS *continued*

Health checks

Health checks aren't just for when things pop up or get worse. You can be proactive and get a checkup on your overall mental and cognitive wellness in order to get better, train and function properly.

First, schedule an evaluation with our primary care sports medicine physician to get an update on your physical and mental state. Then, the physician can refer you to a sport psychologist for a preventive mental wellness session. There you can discuss any concerns about your mental wellness and learn skills and techniques to keep your mental health in the best shape.

Monitoring burnout

Make sure you are taking time for yourself.

Know when to ask for help and take pressure off yourself.

Put yourself first and not just the job at hand.

PATIENT SERVICES

Virtual services

- › Gaming ergonomic evaluations
- › Prevention, evaluation and management of esports-related injuries
- › Esports athlete nutrition, exercise, strength and conditioning education
- › Educational lectures
- › Guidelines and education regarding banned substances in esports
- › Esports psychology and team dynamics

In-person services

- › Healthy Gaming Team Bootcamp
- › Evaluation and training
- › Esports vision screening and vision training

Contact us

Call **216.518.3475** for an appointment with Cleveland Clinic Esports Medicine, or email esports_medicine@ccf.org.

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