STARTING YOUR AIM JOURNEY

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WHAT IS THE PURPOSE OF THIS GUIDE?

This guide is designed to give you the information and resources you need to begin aim-training effectively and confidently. We'll discuss basic setup, first steps, and valuable tips for aiming. After reading this guide, you'll have the tools and knowledge needed to become a great aimer! Have more questions about aiming?

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TABLE OF CONTENTS

1 - INTRODUCTION

1.1 - HOW IS AIM TRAINING BENEFICIAL?

You can always aim train for fun, but most people start aim training because they want to elevate their skills in first-person and third-person shooter games. If you are interested in aim-training, you should note both the pros and the cons; and understand what aim-training will do for you in-game and what it won't do. Let's start with the benefits.

HOW CAN AIM TRAINING IMPROVE YOUR GAMEPLAY?

- You may be able to hit shots and track targets more consistently
- You may enable new opportunities for you to outplay your opponents
- You may be able to read your target's movements better
- You may have better overall control of your mouse, including in non-aim situations

These improvements are helpful; however, this is roughly the extent of benefits from aim training. All these benefits will vary depending on what you practice, how you practice, what your main game is, and how you apply your practice to your game. You may have expectations for how you'll improve in-game, but these expectations are not always realistic. Remember that there's no guarantee that the skills you'll develop from aim training will transfer to in-game environments.

WHAT ARE SOME THINGS THAT AIM TRAINING WON'T DO?

- You won't have better positioning.
- You won't have better decision-making.
- You won't be better at *anything* that can be considered part of "game sense," game-specific mechanics, or most other non-aim related skills.

If something besides aim is significantly holding back your performance, aim-training isn't going to be your best option. Many people *do* have poor aim, and aim can always be better, but before you train your aim, you should ask yourself, **"Is aiming really the skill I need to work on?"**

To further integrate this concept for you to remember, we're going to repeat it once more: **Aim-training will not make you better at games unless aim is *specifically* a skill that's holding you back when playing.** Luckily, aiming is a fundamental skill in most shooter games. Improved aim will often result in some overall improvement, but that does not make aiming a magic solution for becoming skilled or successful.

1.2 - WHY AIM TRAIN, WHY NOT JUST PLAY?

A common question that many individuals may think about is, "Why can't I just play my main game normally to improve my aim?" Although many competitive FPS games have their own custom in-game maps for the purpose of aim-training, such as CS:GO or Overwatch, many games simply lack the tools necessary for creating custom training maps. As a result, your options for practicing your aim in-game are quite limited, if not absent. So, your only means of improving is by simply

playing the game—an environment where you might not have many opportunities to practice your aim. Even if your game does have options for training your aim, you might not be training as efficiently as you would using an aim trainer. There are four key elements aim trainers can provide.

WHAT ADVANTAGES DOES AIM TRAINING HAVE OVER ORDINARY GAMEPLAY?

- *Isolation*: You can practice a specific skill without distractions.
- *Repetition*: You can practice the same skills over and over quickly.
- *Customization*: You can practice any scenario within the limits of the trainer.
- *Feedback*: You can easily get information about your progress.

If you are someone who goes to the gym, these advantages might sound similar to the reasons why many forms of exercise are effective, and it can be helpful to use this analogy when thinking about aim training. Aim training lets you build up the fundamentals you need to perform in your main game, just like how weightlifting can help you build the strength you need to become a better athlete[1].

[1] Extending this idea, don't forget to train beyond the gym; the best athletes are not made by only working out in the weight room (unless you're a powerlifter).

2 - SETUP

2.1 - PICKING AN AIM TRAINER

To begin aim training, all you need is a computer that can run your games, a mouse and keyboard, some desk space, and an aim trainer. Most people reading this guide probably have their hardware sorted out but might not know what aim trainer to use. **As of the writing of this guide, the most popular and most recommended aim trainers among serious aimers are** KovaaKs and Aimlabs. Most players strongly prefer them because they implement the four advantages noted above quite well and have a large and constantly growing set of training scenarios created by the community. Aim Lab, in particular, is free on Steam, which makes it accessible for those who want to start aim training. One notable alternative is Aimbeast. It has many of the features that KovaaKs and Aim Lab have and has additional features which aren't present in KovaaKs or Aim Lab. The downside is that many of the training scenarios created for Aimbeast do not match the quality or quantity of either KovaaKs or Aim Lab.

2.2 - UPGRADING YOUR SETUP

It is not necessary to upgrade your setup beyond the basics to begin aim training. **Do not hesitate to start aim training just because you are worried about your setup.** That being said, there are ways to improve your aiming experience and the quality of your training. Each of these items could be their own entire guide (and some guides do exist), but here are some common upgrades that can be useful.

WHAT CAN I DO TO UPGRADE MY AIM TRAINING/GAMING SETUP?

- Get a monitor with at least 144Hz, but ideally 240Hz
- Get a mouse with a good sensor[2] and suitable for your hand size
- Get a mousepad that's low maintenance, and with a glide you're comfortable using.
- Get a desk that's suitable for your height and with plenty of space for mouse movements.
- Get a mechanical keyboard with your preferred switches (Reds, Blues, Browns, etc.)
- Upgrade the specifications of your computer (CPU, GPU, RAM, etc.)
- Misc. accessories such as:
    - Mouse feet/skates
    - Mouse bungee
    - Mouse cable/paracord (if applicable)
    - Grip tape/stickers
    - Compression/Sports sleeve

It is up to you how you choose to spend your money, but do not spend more than you can comfortably afford. With that said, do not let your setup be a barrier to starting. Mana, one of the best aimers in the community, used to play on a 60 Hz monitor and could still outclass the vast majority of aimers.

[2] Most modern mice have good sensors, so do not worry too much about this.

2.3 - CONFIGURING YOUR AIM TRAINER

When many beginners begin aim training, they often find themselves unsure of what settings to use to best train effectively. Typically, the solution given to beginners is to tell them what sensitivity, FOV, or other settings they should use, but this advice generally neglects to explain the reasoning behind these common suggestions. So, let's cover some settings that you can tweak during your aim training and the purposes they serve.

2.3.1 - UNDERSTANDING MOUSE SENSITIVITY

HOW DO I FIGURE OUT WHAT MY CURRENT SENSITIVITY IS?

Most games use different scales for sensitivity, which means that your sensitivity settings for one game may not directly transfer to another game. Most aim trainers, including KovaaKs and Aim Lab, deal with this by offering multiple scales for setting your sensitivity (Overwatch, Fortnite, Source, etc.). Still, you are best off thinking of sensitivities in terms of actual distance measurements rather than arbitrary values. The most popular and universal way to measure sensitivity is **cm/360°**, or how many centimeters you need to move your mouse to perform a full rotation in-game (i.e., "centimeters per 360-degree rotation"). There are various tools for converting between cm/360° and different game sensitivities, which you can learn about here. Keep in mind that your mouse *DPI* also affects your mouse sensitivity.

WHAT SENSITIVITY SHOULD I USE?

Of the common settings questions asked by beginners, "What sensitivity should I use?" is probably the most frequently asked. By and large, most people will say that sensitivity is up to preference, but if you need a point of reference, **aim to use a sensitivity somewhere between 20cm/360° to 50cm/360°**. This is not a hard rule, but most people's ideal sensitivity lands within that range. Typically, you should prefer slower sensitivities for games that are more "flick" reliant, such as CS:GO or Valorant, and higher sensitivities for games that require more tracking or frequent mouse movements, such as Overwatch or Fortnite. **If you are unsure where to start, any sensitivity around ~30cm is an excellent, well-rounded sensitivity for many games.** Feel free to try various sensitivities, but don't spend too much time worrying about your sensitivity. Test out what works for you.

ARE YOU SURE I CAN CHANGE MY SENSITIVITY? WON'T THAT AFFECT MY MUSCLE MEMORY?

Understandably, there are many beliefs about sensitivity among different gaming communities, and concerns about changing sensitivity too much can worry novices. One of the most common myths about sensitivity is that you must consistently use the same sensitivity across all settings to ensure that you preserve "muscle memory" when aiming. This is a very simplified and inaccurate understanding of *motor memory*, an important idea in neuroscience. Because aiming has little to no formal research, **it is best not to worry about muscle/motor memory, even when discussed as a proper neuroscience concept, as its role in aiming is not well understood.** Enough skilled players have shown over time and through experience that it is okay to change your sensitivity, and it is

okay to use different sensitivities for different games[3]. You can further enrich your aim training experience by using a sensitivity randomizer. If you would like to read more information about the matter, please view our article on Why 'Muscle memory' is seen as a meme in aiming.

2.3.2 - UNDERSTANDING FIELD OF VIEW

WHAT FIELD OF VIEW (FOV) SHOULD I USE?

Beginners also sometimes worry about using the "correct" FOV when aim training. Similar to muscle memory concerns, beginners tend to believe that using the "wrong" FOV will harm their ability to improve, particularly when using a FOV that may be different from what they use in-game. Although there are minor benefits to matching your in-game FOV while aim training, FOV is not particularly important for seeing improvements in aim. Instead, it is more beneficial to understand some basic attributes of FOV and use that to inform what FOV you want to use at any given time. Note that this advice is tailored to when you are aim training.

The two most common FOV scales to use in aim trainers are Overwatch FOV and Source (CS:GO, TF2, etc.) FOV. Overwatch FOV has a more horizontal view, while Source has a more vertical view. Overwatch FOV also displays less view than Source FOV overall, meaning that 100 OW FOV is **not** equal to 100 Source FOV (i.e., you will see *more* with Source). **A good default Overwatch FOV is 103[4], and a good default Source FOV is 90.**

HOW DOES FOV AFFECT AIM TRAINING?

As you raise FOV, you gain increased vision, allowing you to see more targets at once. This is particularly useful for scenarios where a smaller FOV will cause you to frequently run out of visible targets to shoot because you can't see as much, particularly in target-switching scenarios like *patTargetSwitch* or *kinTargetSwitch*. For target-switching scenarios, using a larger FOV such as 100-110 Source can be very useful. Consequently, more FOV causes targets to appear smaller, which can make precision scenarios harder, and high FOV values also cause distortion around the edges of your screen, similar to a fisheye effect. Finally, something that catches a lot of beginners off-guard is the fact that higher FOV causes sensitivities to feel *slower*. If you change your FOV, expect your sensitivity to feel different, even though it hasn't changed.

For lower FOVs, the opposite is true for all of these things: you have less vision, targets appear larger, there is less distortion around the edges, and sensitivity will feel *faster*.
Rarely should you use a lower FOV, but there are two notable benefits to low FOV: 1) You will be able to see your own movements more clearly, which can help you improve skills such as smoothness, and 2) Sometimes it is very beneficial for targets to appear larger, particularly when it comes to precision. The first benefit is a good reason to use a lower FOV when practicing, but the second

[3] There is small evidence to suggest that you can improve more efficiently if you vary your sensitivity, but this is largely unexplored, and we still do not know what the best way to vary your sensitivity is. This is also *not* to say that there aren't advantages to training on one sensitivity, either. The point is that without knowing one way or another, you are better off not worrying about unknown implications.
[4] We suggest 103 OW because it's a widely accepted and comfortable FOV with sufficient peripheral vision for the majority of gameplay situations.

benefit is often discouraged during aim training. Using a low FOV to make a scenario easier is an example of *cheesing*. Cheesing is when you do something for the sole purpose of improving your scenario score, even when it won't help you practice better.

2.3.3 - WHAT ABOUT ALL THESE OTHER SETTINGS?

Aim trainers can offer many extra settings for tweaking your practice setting to match your preference. These settings are largely up to you to decide on and will not affect the quality of your practice to a large extent. For the most part, this is because additional settings are typically for aesthetics, such as visual and audio changes. Below is a list of common settings that aimers change in KovaaKs and Aim Lab.

WHAT ARE SOME OPTIONAL SETTINGS THAT I CAN CHANGE IN AIM LAB/KOVAAKS (AND OTHER AIM TRAINERS)?

- Wall & floor colors/textures
- Bot colors
- Crosshairs
- Hit/Kill sounds
- UI elements and their placements

As said before, these are entirely up to preference, but they can make aim training feel more engaging once you've fine-tuned your settings. You should take some time to experiment to see what works for you and what doesn't. Similar to FOV and mouse sensitivity, there's no harm in changing your visual settings regularly.

3 - GETTING STARTED

3.1 - HOW DO I DETERMINE MY SKILL LEVEL?

At first, it can be overwhelming to figure out where to start. To determine your skill level, we recommend playing our Intermediate Aimlabs or KovaaKs benchmarks first. Start by playing through each of the benchmark scenarios for your chosen aim trainer for about five runs each (approximately 5 minutes for each scenario). After you're finished, input your highest score from each benchmark scenario into our progression sheet either manually, with our Webapp[5] or Auto Progress Sheet Updater[6]. You will then see a rank indicator near the top of the sheet showing your rank. If you've happened to place in diamond, you can safely start playing the advanced benchmarks by repeating the same process as before, playing through each of the benchmark scenarios. Once completed, you should have an understanding of your skill level.

- You may find up to date resources in our discord in the Resources Channel, leading to updated sheets and benchmarks for Aim Lab / KovaaK's

3.2 - WHAT SCENARIOS SHOULD I PRACTICE?

Now that you have a general idea of your own ability, you might be asking yourself, "What scenarios would be best for me?". It can often be overwhelming for players new to aim training when there are literally thousands of scenarios to play. Luckily, we've curated some of the best scenarios and created routines catered to your skill level with our Fundamental Routines. Simply play the routine according to your rank. Alternatively, you can play any of our Game-Specific Routines. If there's a particular aspect of your aim that you'd like to improve, you can also refer to our Weakness-specific routines to correct bad habits. Inevitably, there will come a time when you start to "grow" out of many of the pre-made routines, and you'll want to do more personalized training targeted more towards your own style and proclivities. Our Recommended Scenarios sheet should prove to be useful for such cases, as they can fine-tune your practice further to get the most out of it. You can find all the above training in the resources channel in our discord server.

[5] Only available for Aimlabs benchmarks

[6] Note that this tool is only relevant for the KovaaKs benchmarks

4 - PRACTICING EFFECTIVELY

4.1 - AIM THEORY

Aim Theory can best be described as both the mechanics behind aiming and the methods used to train optimally. It's essential to familiarize yourself with how aiming works if you hope to practice effectively along your aim journey. Ideally, you want to think about aim training in conjunction with your aim in games. Please note that your improvement in aim trainers won't always yield instant results in your games. You won't suddenly become a better player just because you used an aim trainer. That's sometimes a harsh reality many new players face when they begin aim training.

Aiming can be separated into multiple categories. The core ones are **Clicking**, **Tracking**, and **Switching**. To further expand on the three main categories, a few subcategories can be applied to aim training, which all rightfully deserve to be covered. The subcategories we have are *Dynamic* and *Static* for Clicking, *Reactive* and *Precise* for Tracking, and lastly, we have *Speed* and *Evasive* for Switching. In addition to the core categories, there is another category; *movement*. Movement aiming is typically known as **Strafe Aiming.** Let's start by explaining each one and how they should be approached to maximize your practice time.

4.1.1 - CLICKING

Clicking is an aiming category that involves eliminating single-click or multi-click targets as quickly as possible. Such scenarios emphasize *speed* and *accuracy* to maximize your potential score. You should approach targets efficiently without wasted mouse movement, then micro-correcting onto the targets when needed. This is the general premise behind clicking scenarios, but *static* and *dynamic* clicking each differ in how they should be played.

STATIC CLICKING

Static involves scenarios where the targets are not moving; they're completely *static*. For static clicking, once you develop a high accuracy during your runs, say, at least 95% accuracy or higher, you should increase your speed, eliminating targets even faster. Maintain your pace until you can get at least 95% accuracy consistently once again, then try going even faster.

DYNAMIC CLICKING

Dynamic scenarios include moving targets. In dynamic clicking scenarios, your shots should be well-timed to where the targets can be killed easily while still being swift. Unlike static, dynamic incorporates reading the movement patterns of the bots. Although your reading skills will naturally improve the more you play, improving your aiming habits should be the focal point of your training. Overall, maintaining a balance between speed and accuracy is essential for both types of clicking scenarios.

CLICKING PRACTICE TIPS

- Pace your shots. Maintain a good rhythm throughout your run and in-game.
- Approach targets smoothly while wasting no mouse movement.

- Build up speed while retaining good accuracy.
- Always have the next target in mind.

The recommended sensitivity range for clicking scenarios is between 30-60 cm/360°. They're usually easier with a control mousepad, allowing more friction for proper stopping power.

4.1.2 - TRACKING

While clicking is about eliminating as many targets as possible with simple clicks, tracking is about holding down the mouse button and keeping your crosshair on a single, moving target. Tracking requires players to be *smooth* and *reactive* to perform well, and both will vary in importance depending on the scenario.

REACTIVE TRACKING

Reactive scenarios are typically ones with bots that change directions often and have hard-to-read movement. You mustn't predict the bot's movement, especially in the early stages of your aim journey[7]. Instead, you should *react* to the bot's movement and move your crosshair back on target swiftly and fluidly. Focusing more on the bot rather than your crosshair can also help with reacting appropriately to the bot's sudden changes in movement. Overpredicting can often lead to shaky aim and reacting too early, thus moving your crosshair off the target.

PRECISE TRACKING

Precise tracking usually involves tracking a small target that follows a predictable but hard-to-hit pattern. Smoothness and precision can be improved by playing small or thin variations of scenarios with relatively higher mouse sensitivities. It can also be improved by moving your mouse in one smooth motion rather than multiple small motions. It requires deliberate effort to focus on delicate mouse movements with minimal correcting.

TRACKING PRACTICE TIPS

- Be reactive to when the bot changes direction. Do not predict.
- Focus more on the bot, not the crosshair.
- Match and follow the target in the direction it is going and only ever change direction when the target does, do not chase after it.
- Improve your smoothness and precision with thin or small tracking scenarios.

It is recommended to play tracking scenarios at around 25-35 cm/360°, which is generally faster than suggested sensitivities for clicking scenarios.
Smooth, hard mousepads with lower friction are generally better for tracking, as they will allow for easier micro-corrections and quicker reactions for targets near your crosshair.

[7] Predicting is something you will undoubtedly do without being aware of it, but while practicing your aim versus bots, it is recommended to focus on reacting instead of predicting. However, predicting (in certain in-game situations) is a necessary skill.

4.1.3 - SWITCHING

Switching, otherwise known as *Target-Switching*, is a skill that utilizes fast target changes that require a certain amount of time before each target can be eliminated. In other words, switching includes both clicking and tracking elements, where a target is acquired quickly, then tracked for a short amount of time in order to kill the target. This time window is known as *Time To Kill*, or *TTK* for short.

SPEED AND EVASIVE SWITCHING

Speed and Evasive scenarios are played similarly, with the biggest difference being that Evasive Switching scenarios involve harder-to-hit bot patterns. In contrast, speed scenarios have easy patterns, thus resulting in a greater emphasis on speed. Much like clicking, you should always be mindful of your next target. So, the moment you eliminate a target, you can immediately switch to the next one. Likewise, turning on spawn sounds for bots will greatly aid you in situations where there are no targets in your field of view. Overall, switching relies heavily on the speed of your flicks, smooth tracking, efficient micro-corrections (again, no wasted movement), and the pathing of your switches (acquiring targets closest to your crosshair).

SWITCHING PRACTICE TIPS

- Always have the next target in mind.
- Approach targets smoothly while wasting no mouse movement.
- Turn on spawn sounds to easily acquire targets outside your FOV.
- Maintain a fast but steady pace throughout your run.

4.1.4 - STRAFE AIMING

Strafe aiming adds complexity to the aforementioned aim categories with movement. Not only do we shoot at moving targets in every FPS, but we also move our player, and a huge part of aim is being able to move to aid your aim, as well as avoid getting hit.

The terms you should know are *mirroring* and *anti-mirroring*. Mirroring is moving towards the same direction as your target, where you would only need to move your crosshair very little or not at all to track your target. Anti-mirroring is moving in the opposite direction of your target where you would need to move your crosshair more than if you were stationary.

When playing scenarios or tasks with movement, be careful of playing for a high score. To get the most accuracy, players will tend to mirror targets, making them easier to hit. While this is great for doing a lot of damage in most FPS game situations, this could cause the player to receive a lot of damage from their target. It's important to keep this in mind, as it can cause you to develop bad dodging habits while aim training.

When you are being targeted in-game, movement should be more focused on avoiding damage. When you are not being targeted, move in order to do as much damage as possible to your opponent(s). Players need to be able to hit targets while dodging with the purpose of not being hit.

Strafe aiming practice in aim trainers should make you comfortable moving in any direction while independently moving your crosshair on target.

STRAFE AIM PRACTICE TIPS

- Work on Mirroring and Anti-Mirroring during aim training
- Movement should reflect in-game dodging in order to get the best practice
- Look for smoothness or reactivity issues that are amplified while practicing strafe aiming, and isolate those problems with stationary aim training

4.1.5 - HOW LONG SHOULD YOU TRAIN YOUR AIM FOR?

It's better to spend 1 to 2 hours max, depending on your level, then spending the rest in-game. Longer sessions should have breaks in between to avoid diminishing returns, injuries such as RSI or blurred vision, or zoning-out. Overall, it depends on your goals, but you should never push yourself to the point that it affects your well-being and health.

4.2 - HEALTH & POSTURE

4.2.1 - HEALTH

Whether you're a gamer or not, your health is paramount for functioning at a high capacity. It's far too common for gamers to cut back on exercise, sleep, or dietary management to play a few more matches, if not forgo these basic regimens altogether. Truth be told, skipping out on such things can actually cause more harm than good for those looking for long-term growth, not only as a player but as an optimal human.

Now, we aren't asking you to become an Olympic athlete or to count every calorie you intake, but you should still be mindful of your physical activity and the food you put into your body. Many people often adopt a sedentary lifestyle where they incorporate little to no physical activity in their day-to-day lives, and this is especially true for many gamers. When you're in this state for extended periods of time, it can often dampen your motivation to improve yourself. Furthermore, physical activity primes the brain to learn compared to one that isn't stimulated by physical activity. So, take some time out of your schedule to go outside and be active; you'll be glad you did.

The active lifestyle people lead is often followed by a healthy diet. While pre-packaged food is convenient, they are often highly processed and loaded with sodium or sugar. They may come in handy every now and then, especially if you're short on time, but relying on them as your main source of food isn't good. Consider adding plenty of whole grains, fresh fruits, and vegetables to your diet. If you find yourself eating too much meat on a daily basis, think about cutting back to about 8 to 9 servings of lean meat per week. Also, be sure you're drinking plenty of water throughout the day. An exact number can't be placed on how much fluid you should intake, since it depends on your age, sex, lifestyle, and of course, diet. A general rule would be about 15½ cups (~3.7 liters) per day for men and 11½ cups (~2.7 liters) for women. Again, it will depend on the aforementioned factors, but those guidelines will be suitable for most people.

Another important aspect of your health is sleep. Many gamers will often stay up to play for longer at the expense of their own sleep. A lack of good quality sleep negatively affects their in-game performance in multiple ways: slower reaction times, worse aim, poorer decision-making and game sense, and overall worse gameplay that could have been avoided had they simply slept and played at another time. It's essential to adopt a consistent sleep schedule where you fall asleep and wake up at the same time each day. By doing so, you will develop a circadian rhythm where you will naturally feel sleepy when approaching bedtime and wake up feeling refreshed. You should also avoid TV screens, monitors, tablets, and phones before bedtime, as these emit blue light, which can interfere with your body's production of melatonin—the hormone responsible for regulating sleep. For those interested in learning more about sleep and how to achieve better sleep, we recommend going to our Sleep Guide, where we cover the topic in greater detail.

We also recommend checking out our Health & Nutrition guide for more information on what foods you should eat, general tips, and additional resources.

4.2.2 - POSTURE

Similar to exercise, diet, and proper sleep, maintaining correct posture is essential for warding off potential health problems later on in life. Gamers often get a bad reputation for being slouchers, and those who train their aim are no exception. Bad posture can sometimes be hard to identify since it usually doesn't cause any noticeable short-term problems. After years of poor posture, it can result in a significant toll on your back, and in turn, your comfort and well-being. Additionally, posture also plays a role in our gaming and cognitive performance. Like peripherals, there are entire guides on understanding and achieving proper posture, but we'll just cover the basics.

WHAT EXACTLY IS THE CORRECT POSTURE?

A good posture is one where you're sitting upright with your chest up, giving your neck and lower back natural curvature. The shoulder blades should be moved back and up, allowing them to be closer to the spine. Your thighs should remain parallel to the floor, and your knees should be about as wide as your hips. Lastly, your forearm and wrist should be parallel to the floor, as well. Weight should be distributed evenly with your forearm across your mousepad or desk, and your wrist should not arc up or down.

Utilizing the posture described above sounds fairly straightforward, but the difficulty lies in maintaining this posture long enough for it to become a habit. It can be far too easy to regress subconsciously into your old sitting position due to old habits. This can be remedied by simply reinforcing new habits—in this case, correct posture—on a constant basis. You can set up reminders to check on your posture and correct it if needed. With time and diligence, you will start defaulting to a healthy posture automatically without much thought. For more information about posture and its importance in gaming, we recommend 1HP's article here. It's a very good read for those looking to broaden their knowledge regarding the topic.

4.3 - GRIP STYLE & UNITY

4.3.1 - GRIP STYLE

Out of the three main mouse grips: Fingertip, Claw, and Palm grip, there are subtle but notable differences for each that can affect performance. Please note that these differences shouldn't justify changing your normal mouse grip. You should use the grip that feels most natural to you.

Fingertip grip is characterized by only your fingers making contact with the mouse. Aiming is mostly performed with the fingers and wrist. This grip generally has a higher skill ceiling by allowing the player to make fine micro-adjustments more easily. Usually, players with higher mouse sensitivities will adopt the fingertip grip, but players across the whole sensitivity spectrum use it.

Claw grip is where the only contact points are the palm and the fingertips; the fingers are arched, so they aren't lying flat on the mouse. This grip is better for faster mouse button actuation compared to fingertip or palm grip, which is ideal for CPS (Clicks Per Second). Claw grippers typically aim with mostly their arm and wrist while allowing for better dexterity for smaller movements.

Palm grip is arguably the most common grip among the vast majority of players. With this grip, your entire hand is making contact with the mouse. Although most players consider this grip the most comfortable, it offers the least flexibility for adjustments. However, it still provides value for tracking players who utilize more of their arm for aiming rather than wrist and fingers. The lack of fine adjustments afforded by palm grip should not deter you from using it; it's still a good grip. Even the pros show its feasibility in the highest level of competitive play.

During play, you should avoid excessive *tensing* of your hand, wrist, or arm. It may cause inconsistencies with your aim, and more importantly, potential health issues after long-term use. One way to counter over-tensing is to simply be mindful of when it happens. Frequent reminders to relax your grip will help ward off adverse effects or even stop you from over-tensing altogether.

As mentioned before, you should use the grip that feels most natural to **you**. Don't be compelled to use one grip over another simply because of the reasons stated above. There's no grip that's objectively the best, and you should not force yourself to adopt a specific grip otherwise. Simply go with what works best for you.

4.3.2 - UNITY

The kinesthetics behind aiming is as far-reaching and comparable to a runner hitting a good stride or a golfer executing a backswing. Like an elite runner or a professional golfer, you need to consider multiple parts of your body in order to aim optimally. The shoulder, elbow, wrist, fingers; your whole arm needs to work in unison to aim at a high level. Some factors will have a notable influence on your movements, such as grip style and mouse sensitivity. In the previous section, we briefly covered the correlation between the grip styles and the parts of the arm that are typically utilized. So, we can safely omit grip style for this discussion. The main focus we'll be talking about is the relationship sensitivity has with our proprioception.

All ranges of motion, and the finer details for each, are largely dependent on sensitivity. Let's contextualize sensitivity in terms of what the aiming community currently understands and can logically reason: Higher sensitivities require you to move your mouse less; lower sensitivities require you to move your mouse more. This simple idea, along with a basic understanding of the human body, is enough to allow us to come to the following conclusion about how different sensitivities affect aiming.

HOW DO DIFFERENT SENSITIVITIES AFFECT AIMING?

- Lower sensitivities require you to use more of your arm to aim.
- Higher sensitivities require you to use more of your wrist and fingers.

To achieve proper unity, you need to consider the roles your wrist, fingers, and arm will play and the effort required for each. Low sensitivity players who use more of their arm to aim will find that they are generally smoother than high sensitivity players who use more of their fingers or wrist to aim. This is mainly due to two reasons: 1) High sensitivities will register more of your mouse movement, and consequently, it will scale any inconsistencies of your aim, and 2) The fingers offer far less control in exchange for in-game mobility. Luckily, fingertip players can improve this deficit by further developing their *mouse control*, which in turn, will help with smoothness.

4.4 - MINDSET AND PROCESS

4.4.1 - GROWTH MINDSET

Having the right attitude is arguably just as important, if not more, than anything aim theory or a routine could provide. If you have hopes to improve beyond your current status, you must have the right mindset to set yourself up for success in your aim journey, and furthermore, your success in life. Understandably, it's easy to succumb to the mental pitfall of feeling inadequate compared to others or embracing the idea that you'll never improve. It's not always raw mechanics or game-sense that's holding you back from improving. Sometimes, your greatest obstacle just might be yourself. We can start by illustrating the distinction between a *fixed mindset* and a *growth mindset*.

Fixed Mindset	Growth Mindset
Avoids challenge	Embraces challenge
Doesn't learn from mistakes	Learns from mistakes
Gives little to no effort	Gives 100% effort
Easily gives up	Persistent in the face of difficulty
Only plays to win	Plays to improve
"I'm a failure"	"I will learn from my failures"

A person with a growth mindset does not shy away from adversity; they look for ways to overcome it. Growth-minded players will often go out of their way to seek challenges for the sake of improving. A fixed mindset, on the other hand, usually results in stagnation, as you're not seeking ways to improve. Players with this mindset typically only play to win without first taking the time to understand their shortcomings. We'll cover self-reflection and reviewing later, but you should first possess the correct attitude before learning the specifics of analyzing your own plays.

Another important aspect of mindset is developing confidence by **believing** you can perform well. If you believe you can't do something, you'll likely perform worse or even quit altogether. This usually stems from a fear of failure or mediocrity, which can ultimately hold you back from improving. Being open to the possibility of mistakes will allow you to recognize your own flaws so that they can be addressed. At the same time, being overconfident can be just as dangerous. Egotism often gives people an exaggerated perception of their strengths while making them oblivious to their weaknesses. You need to make an accurate assessment of yourself so you can see exactly what you're doing right, and what you're doing wrong. Being acutely aware of both is crucial for improvement.

4.4.2 - GENETICS

This is a fairly debatable topic, so we won't cover it in great detail. The most notable element relevant to aim training, and gaming as a whole, is *Visual Reaction Time (VRT)*. Essentially, your VRT is how quickly you can react to a singular event. Ideally, you want to have an average reaction time of under 180ms. For comparison, the average reaction time among the general population is 284ms.

VRT is determined by genetics and age, but it's also influenced by environmental factors such as diet, sleep, exercise, and overall general health. Reaction time plays a small role in aim training, particularly for reactive tracking and speed clicking scenarios. Despite that, VRT has little importance on your ability to aim, so you shouldn't be concerned about it.

A tenacious mentality and good practice habits have a much more significant impact on your results than anything genetics can do. Besides, you won't know your latent potential until you try to become the best player that you can be. In short, **hard work beats talent when talent doesn't work hard**. Don't let the start of your Aim Journey determine how you're going to finish, because you can **always** improve.

4.4.3 - REFLECTING/REVIEWING

To improve efficiently, you should make a habit of reflecting on your gameplay through self-analysis. You may not always fully recognize your flaws in the middle of play. How you think you're playing in the present moment can sometimes feel very different than how you're actually playing. There may be runs where you feel like you're performing well at the time, but looking back retrospectively, it may not seem as impressive. This is perfectly normal. In fact, it's actually a good thing; it means you can see room for improvement.

When watching the *VoDs (Video On Demand)* that you've recorded, your mistakes won't always seem clear, particularly if you're new to aim training. We suggest reaching out to a Voltaic mentor, coach, or otherwise an experienced player to have them review your runs, as they might have a better understanding of your weaknesses. Reviewing your VoDs will require a base level of knowledge about aim training, but here are some indicators to keep in mind.

WHAT CAN NEGATIVELY AFFECT MY AIM?

- Shakiness
- Slow reactivity
- Lack of speed
- Inaccuracy
- Overprediction
- Doubt
- Slow micro-corrections
- Poor timing/reading skills
- Poor Target Prioritization
- Poor Crosshair Placement

It's essential that you remain objective when analyzing your own footage. With aim training, it doesn't pose as much of an issue compared to actual games where feedback isn't as immediate or apparent given the large number of variables that can impact your overall performance in a match. Aim training is much simpler in that regard. Still, it's important to recognize when there are glaring issues with your aim. We also recommend watching VoDs from high-level players, as they can often highlight the mistakes you're making during your own runs. VoDs from our players are accessible through our KovaaKs and Aimlabs Ranking Sheets.

Identifying weaknesses and working to improve them is an integral part of *deliberate practice*. Rather than just mindlessly playing scenarios repeatedly, your practice should be focused and purposeful with the goal of improving in a certain area. This way, you can improve faster and more efficiently. Our 1HP x Voltaic AMA on deliberate practice covers this topic to a great extent, and we're sure it can help you immensely on your Aim Journey.

GLOSSARY

Aim - The skill of moving your crosshair onto a target or maintaining your crosshair on a target.

Aim Theory - The mechanics behind aiming and the methods used to train optimally.

Aim Training - The practice of improving your aim through mouse control either using an aim trainer or in-game training maps.

Anti-Mirroring - An element of strafe aiming where you're moving in the opposite direction of your target. (e.g., The target moves right on your screen, so you move left)

Benchmark - A scenario or task which is used to determine your skill level.

Bot - A target in a specific map or scenario that is intended to be eliminated or fixated on by the player.

Cheesing - The act of changing your settings or setup for the sole purpose of achieving a higher score.

Claw Grip - A mouse grip where the palm and the fingertips are the only contact points, usually characterized by the arching of the fingers.

Clicking - A category of aiming where the player must eliminate single-click or multi-click targets as accurately and quickly as possible.

CM/360° - Also known as CM/Rev, is used to determine sensitivity across all games. It is the measurement in centimeters needed to perform a full 360° horizontal rotation in-game. The lower the cm/360°, the higher the sensitivity.

CPI - Also known as DPI, Counts Per Inch (Or Dots Per Inch) refers to how many "counts" the mouse can read per inch of movement. This determines the mouse's base level of sensitivity.

Deliberate Practice - Highly focused practice that's structured with specific goals in mind for the purpose of improving.

DPI - See *CPI*.

Dynamic Clicking - A subcategory of clicking scenarios where the targets are moving.

Field of View - Commonly shortened to FOV, it is the area of the player's viewing angle at any given time, typically measured in vertical or horizontal degrees.

Fingertip Grip - A mouse grip where only the fingertips are making contact with the mouse.

Mirroring - An element of strafe aiming where you're moving in the same direction as your target. (e.g., The target moves right on your screen, so you move right as well)

Mouse Control - The level of control you have over your crosshair in relation to your mouse, arm, wrist, and fingers.

Micro-correction - A small movement of your crosshair to correct your aim back onto the target.

Palm Grip - A mouse grip where the entire hand is making contact with the mouse. The palm and fingers lie flat on the mouse.

Prediction - Guessing where a target will be and aiming according to that guess.

Reactivity - An aspect of tracking that involves quickly reacting to direction changes and correcting your aim accordingly.

Reading - The ability to acquire and maintain your aim on a target based on an understanding of their movement and what you perceive.

Scenario - A map or task in an aim trainer which is used for practice or benchmarking.

Sensitivity - A value that determines how far your crosshair will move when moving your mouse a fixed distance. It is typically measured in *cm/360°*

Smoothness - The level of control over your mouse movements which are removed of jitters and unneeded adjustments. Movements are purposeful and efficient. See *Mouse Control*.

Speed - How quickly you can move from one target to another.

Strafe Aiming - Also known as movement aiming, it's a subcategory of aiming accompanied with clicking, tracking, or target-switching elements where the player moves while eliminating targets.

Static Clicking - A subcategory of clicking scenarios where the targets are stationary.

Switching - An aiming category that utilizes fast target changes that require a certain amount of time before each target can be eliminated.

Tasks - See *Scenario*.

Tensing - Often referred to as over-tensing, this is the excessive tightening of your arm, wrist, hand, or fingers which can impede aiming or cause health issues after long-term practice.

Time To Kill - Commonly shortened to TTK, this refers to the time it takes to eliminate a target after being acquired.

Tracking - An aiming category where the crosshair is maintained on the target for an extended period of time while reacting to direction changes.

VRT - The time between a visual indicator and an individual's intentional response to this stimulus.

VoD - Otherwise known as Video On Demand, these are typically recorded matches, clips, or scenario runs among the greater aiming community.

RESOURCES

- **1HP x Voltaic AMA - Deliberate Practice**
  - https://www.youtube.com/watch?v=mN8NzE57SjM
- **Aim Lab Benchmark Progression Sheet**
  - See #resources on our discord server (https://discord.gg/voltaic)

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  - See #resources on our discord server (https://discord.gg/voltaic)
- **Advice FAQ**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Auto Progress Sheet Updater**
  - GitHub - VoltaicHQ/Progress-Sheet-Updater
- **Benchmarks Guide (Aim Lab)**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Benchmarks Guide (KovaaKs)**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Fundamental Routines**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Game-Specific Training Routines**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Good Posture, Better Performance: What you need to know about Gaming Posture**
  - https://www.1-hp.org/blog/healthy-movement/good-posture-better-performance-what-you-need-to-know-about-gaming-posture/
- **Health & Nutrition**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Issue-Specific Training Routines**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **KovaaKs Benchmark Progression Sheet**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **KovaaKs Benchmark Sheet**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Mindset & Attitude**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Recommended Scenarios**
  - See #resources on our discord server (https://discord.gg/voltaic)
- **Sensitivity Randomizer**
  - https://github.com/Whisperrr/SensitivityRandomizer

- **Translated Voltaic Resources**
  - https://bit.ly/VTtranslations

- **Why Muscle Memory is seen as a Meme in Aiming**
  - See #resources on our discord server (https://discord.gg/voltaic)

CREDITS

This guide was written with the help of our community/staff members:

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