ArmCare.com

THE COMPREHENSIVE RECOVERY PLAN

ArmCare's Nutrition & Recovery Plan

Baseball pitchers are no stranger to soreness and stiffness. It's often described as the feeling of emptiness inside their throwing shoulder as if their muscles have melted away.

Fortunately, the body recovers, and when doing the right things to repair, the arm returns stronger than before.

The old school approach to support a pitchers' recovery process involved:

- Running poles (long slow distances on the warning track between foul poles),
- Compressing and immobilizing the throwing arm,
- Icing the shoulder and elbow.

These "recovery approaches" may help with the pain but may also hinder performance.

Thankfully the baseball community is now more enlightened and uses active recovery as a new age plan to get back to full intensity while decreasing injury risks.

It is the complete opposite of R.I.C.E. (rest, ice, compression, and elevation) and slow distance running, as both of these approaches are not compatible with training high-powered athletes and leaves the throwing arm inactive.

Instead, the active recovery plan involves nutrition, hydration, and other habits to expedite healing and advance tissue strength in the rebuilding process.

Why Active Recovery?

Throwing puts a strain on the body that results in microdamaged muscle fibers and if muscles are weak, microdamage may increase in other tissues such as tendons and ligaments. When cellular damage occurs, fluid accumulates in the area, and immune cells respond by moving into the tissue to clean up the mess and promote tissue repair. A handful of chemical signals trigger and coordinate this response, known as inflammation, and cause swelling, soreness, and heat around the injured site. Inflammation may be affected by an athlete's level of conditioning, age, diet, and stress (ref).

This microdamage and the "inflammatory" signals lead to the soreness and discomfort felt in the days following a heavy throwing bout. Recovery is needed while the throwing arm is underloaded for tissue repair.

It is also important to understand that inflammation is not a bad thing but rather an essential step in the recovery process. Therefore, a push to suppress or stop inflammation (i.e., anti-inflammatory drugs, etc.) is potentially harmful to performance because it blocks the natural process for how the body heals itself and becomes stronger (ref).

Although, without the necessary habits for recovery, inflammation can hang around too long and can leave the arm sore and under recovered. Active recovery is about revving up your body to assist in the repair process and get it back to full capacity faster, and it should start as soon as you step off the mound for the day.

ArmCare Recovery Plan

The Arm Care Recovery Plan will focus on four key agents:

- **Hydration**
- **Sleep**
- **Nutrition**
- **Movement**

These items are the most essential and ignored aspects of sports performance. Get them honed, and watch how your performance will flourish.

1 *Hydration*

Water is a performance-enhancing supplement. Not only do you feel better when fully hydrated, but it improves the body's ability to transport nutrients into the muscle cells. It's crucial if you're training in a hot environment or doing intense training to replace body water.

Guidelines:

- Aim to drink half your body weight in fluid ounces of water.
  Example: A 200 lb athlete needs 100 oz of water or roughly six standard-size water bottles.
- Drink water between innings when you come off the field.
- Post practice and game, consume 16 oz of water (approximately a bottle of water) for every pound of body weight lost.

2 *Sleep*

Sleep is critical for both physical and mental performance. For example, in a study conducted at Stanford University, basketball players who increased their sleep from an average of 8 to 10-hours every night improved their sprint and reaction times and increased their free-throw and 3-point percentage by 9% (ref). These results show it's worth prioritizing sleep and getting as much as possible, especially during crucial competition periods.

Improving your sleep habits is vital for getting lots of high-quality restorative sleep. The ideal sleep environment should feel like a cave—it should be cool, dark, and quiet. Block out light using blackout curtains or a sleep mask, use earplugs or a sound machine to reduce distracting noises, and lower the temperature with a fan or A/C when going to bed (ref).

Work, school, travel, training, and competition can make it hard to get as much sleep as you need. When necessary, a nap can help offset the effects of a night that you don't get enough sleep. Research shows that a short 10-minute afternoon nap can add immediate improvements to energy and mental performance after a night of restricted sleep (ref).

3 *Nutrition*

Nutrition is the basis for optimizing human performance. Without the proper fuel, you slide your genetic potential down a notch (ref). So prioritize and plan ahead to ensure you're getting adequate nutrition both before and after each practice and game. As a general rule, during waking hours, athletes should not go more than 3.5 hours without fueling. Adequate snacks contain both carbohydrates and protein in a 4:1 ratio for macronutrient grams.

The topic of nutrition is complex. Not only does it include sport and individual requirements, but there are individual factors such as food preferences, cost, social and cultural concerns, and convenience that all weigh into the equation as well.

For that reason, it's worth scheduling a session with a sports dietitian to help create a customized recovery nutrition plan.

4 *Movement*

Gone are the days of resting and icing a sore arm. Although these things may help you feel better, they actually delay the healing process and keep you from coming back stronger.

Following a heavy workload, the arm and shoulder muscles are looking for everything to maximize healing. Blood supply is essential, so increasing circulation is a priority to accelerate the recovery process.

There are also changes in muscle length that occur following an outing. Changes in mobility may show either restriction (internal shoulder rotation) or expansion (external shoulder rotation) throughout a season and needs to be adequately addressed.

Lastly, the body needs strength work to help balance the arm from the throwing workloads and managing increases in range of motion. A long muscle that is not strong is at risk for strains. Similarly, if you went to the gym and only worked on one muscle group hard, your body would soon be out of whack—and the same goes for throwing to ensure strength is properly balanced.

Use the ArmCare App to provide you with a personalized recovery program based on strength and range of motion changes, along with specific work for sore areas. This will minimize strength deficits and ensure that strength between the front and rear shoulder are matched as best as possible.

The Recovery Timeline

1 *Immediate*

Get your nutrition on track as soon as you step off the field for the day.

The priority is to drink water to regain the weight lost through sweat and get some carbohydrates and protein in your system to help replenish the calories you have expended. These items provide the essential building blocks for muscle and stimulate the recovery process by signaling growth factors and hormones.

Meals are great, but a shake is most practical and easily digestible after a game or practice with the added benefit of rehydrating the body. Look to consume 30-50g of both protein and carbohydrate (2).

2 *2 Hours into Recovery- Eat a Meal*

It's now time for more fuel with real food. Eat a good meal consisting primarily of proteins and carbohydrates, and add vegetables and fruits for vitamins and antioxidants to help with inflammation.

3 *24-48 Hours into Recovery- Add Mobility and Strength*

Generally, the day following a heavy workload, the arm likely feels stiff. Typically, pitchers lose about 10 degrees of internal rotation following a start (3). Getting back to throwing without taking care of these mobility limitations is a recipe for disaster, as it can alter joint position and movement of the throwing arm.

The sooner these are addressed, the quicker you will be back to throwing at full capacity.

Spend at least 10 minutes on mobility for two days following a start to restore range of motion. It's especially important for starting pitchers who need to be ready for their bullpen sessions which occur mainly 72 hours after an outing.

Your arm may feel smoked, but keep it moving. Muscle contractions squeeze the lymphatic vessels to help remove fluid and waste built up in the muscles.

Muscles and tendon regeneration require some load as part of the remodeling process. Do some light throwing if your body feels right, and strength work helps balance the arm, assist in recovery, and helps push performance.

If you feel broken down, skip throwing or lower the throwing demands.

4 *72 Hours and Beyond- Start Throwing*

At this point, if you have followed your recovery protocols, your arm should be feeling fresh to tackle heavier throwing volumes and intensities.

At 72 hours, it's a good option for a bullpen if you're on a 5-day rotation. However, the return to full throwing is different for everyone and should be adjusted based on your rotation and how the arm feels.

Most important: DO NOT THROW THROUGH PAIN.

Pain is a signal that recovery is not matching the demand placed on the throwing arm and may require a pitcher to take some time off to avoid a more severe issue. If pain and discomfort doesn't resolve in 48 hours, it is a good idea to have someone in the medical field evaluate you.

References

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