

Great Lakes Hockey Strength and Conditioning Clinic

On Saturday I had the privilege of attending the first annual Great Lakes Hockey Strength and Conditioning Clinic in Ypsilanti, Michigan. Brian Sipotz and Darryl Nelson did an amazing job putting this clinic together. For being a first-time event, it went smoothly and the organizers were able to compile an impressive list of coaches and teachers. There was a good variety of topics ranging from programming to using technology to track players more easily. Here is a summary of the day and some of my takeaways from the clinic.

The first presenter of the day was Darryl Nelson. Darryl is the Strength and Conditioning coach for the USA NTDP. He presented on strength training for hockey players. Here are some highlights from Darryl's presentation.

- Although parents would love to hear "sport specific", there is no such thing as "sports specific strength training". Our goal as strength and conditioning coaches is to make our athletes the best overall athletes they can be and reduce the risk of injury. Every athlete needs to be strong, explosive, stable, athletic and resistant to injury. As Darryl says, "sport specific skills are fine motor skills, strength training uses gross motor skills," therefore we are unable to be "sport specific" in the weight room.
- Another good point from his presentation is muscle fiber can be influenced by training. The big thing here is if we train slow, the athletes will be slow. If a hockey player runs long, slow distance all the time they will just end up being the best cross country runner on their hockey team. We need to develop the fast twitch motor units and think of them as sprinters.
- Although strength training is not sport specific, we still need to train based on what we see in hockey. For example, a long powerful stride in hockey is a good stride. This means that doing short, choppy footwork training will not be beneficial to the athlete.
- Some of the big things to watch out for in hockey players and work toward correcting are poor shoulder mobility, psoas not being active enough which causes groin problems, and glutes not firing because of the amount of sitting by the athletes. We need to open up their shoulders, get the glutes firing and strengthen and stretch the hip flexors.
- Doing a lot of one leg training such as one leg jumps and squats can help prevent injury because it teaches control.
- The function of the core is to resist flexion, extension and rotation of the spine. Therefore we need to train the core to do its job. As Darryl says, "we need to do 'anti' exercises", such as anti-flexion, anti-rotation, and anti-extension.
- Single leg training is important as "we are designed to work in reciprocal patterns like running and skating. There are few times in sports where we push with both legs together." We are able to load the leg more with single leg training along with lowering the spinal load.
- Last but not least, "a big butt is necessary for speed and lower back health." If you look at anyone with speed, they will most likely have the "Hockey Butt."

Next up was Jim McKee, who is the owner of Fluid Being. He talked about unconscious learning and athletic performance. Here are some key points.

- “Over 40% of our day is habit driven. These habits are things we do unconsciously. Our brains are hardwired to run on auto-pilot and this auto-pilot system can be programmed to work better.”
- We often overlook afferent (unconscious component of nervous system) contributions to strength, power and athletic performance. Afferent units outnumber motor units (efferent) 3:1. This is important to know so we can better prepare our athletes for what they will encounter on the field of play. Sports are unpredictable, so we need to make sure they have enough of these habits and afferent units programmed to react quickly while playing their sport. This will reduce injury and make them better.
- “Tension = Communication”. Tension travels through fascia at the speed of sound. So, the goal with tension is to get our PNS to accurately respond to tension traveling through fascia.
- Afferent units control the amplitude of tension. We need tension for strength but too much tension can waste energy.
- Unilateral and asymmetrical training should take priority to challenge the afferent pathways.
- Using reactive drills for agility is a good way to challenge afferent pathways.

Justin Roethlingshoefer, the Strength and Conditioning Coach for the University of Miami OH hockey team talked about the utilization of data to drive performance. This technology gives the staff “large data sets to look at to identify premium talent, streamline budgeting, and maximize time and effort.”

- The team uses heart rate monitors anytime they are on the ice or working out to track heart rate. This allows the staff to see how hard they are working at anytime, how they are reacting to certain situation and their fatigue level. The system will give deliver constant data to the strength coach.
- This system helps with more efficient screening, tracking and monitoring, predict how a player will perform based on workload and recovery.
- Being able to accurately see whether or not an athlete needs more rest or can work harder keeps them performing at an optimal level and helps the strengthcoach know more accurately what kind of training the team needs at specific times of the season.

Stephen J. McGregor, Professor of Exercise Science at EMU, also talked about using technology to quantify on-ice training load and predicting performance in collegiate ice hockey players. The big difference between Stephen J. McGregor and Justin Roethlingshoefer was McGregor says heart rate does not tell the whole story. McGregor says “heart rate monitors told us how intense training/racing was on a global level, but again, no metric for the physical output”. He uses an accelerometer attached to the athlete’s trunk to track physical work output.

- This method of tracking gives them “detailed information regarding performance, regardless of results.”
- Training loads specific to the sport can be calculated with this technology.
- The uses for the Performance Manager are:
 - Determining optimal long-term training load
 - Identifying periods of “training stagnation”

- Assuring that the progressive overload principle is applied in a rational manner
- Planning a taper in an attempt to peak for a particular event.”

Carrie Keil, the power skating coach for the USA NTDP, talked about strength training for skaters.

- As strength coaches we need to build a solid foundation of form and technique. Form and technique are the foundation of skating.
- One way we can help skaters is by utilizing stride boards in our programs. The stride board progression Carrie lays out is:
 - 2 Legs- after pushing off the extended leg will stay on the board
 - 2 legs while holding water cups. The goal here is to stay down and keep the core stable so the water does not spill
 - 1 leg- now the leg you push off with will go in the air as you slide across the board on 1 leg
 - 1 leg with water
 - 1 leg with a 360 as you go across the board
 - 1 leg 360 with water
- A lot of single leg work is good for skaters.
- We also can really challenge the athlete with balance work.
- Building a solid foundation in the weightroom will allow the athlete to have a solid foundation on the ice.

hockeystrengthandconditioning.com’s very own Brian Sipotz talked about the Art of Coaching.

- Coaching is the key to any program. It does not matter how good the program is if the coaching is terrible. Good results come from good coaching.
- “The Art of Coaching is weaving scientific knowledge together in a way that moves athletes.” The athlete does not care how much you know until they know how much you care.
- We as coaches need to connect with our athletes and put their interests ahead of our own. We can do this by learning nicknames, interests, hobbies, family members and birthdays.
- We need to constantly be reflecting on whether or not our coaching style is working. If not, we need to try something new.
- When cueing athletes, it is important to tell them what you want them to do instead of telling them what they shouldn’t do.
- Using cues that have an external focus are more effective than internal cues. For example, instead of saying “put your weight in your heels, say “push your heels through the floor.”

Joseph Maher, University of Michigan Olympic Sports Strength and Conditioning Coach, talked about developing an annual plan for the last presentation of the day.

- Putting together an annual plan increases the potential for achieving specific performance goals

- He breaks the year into transitional phase 1, preparatory phase, competition phase, transitional phase 2
- Transition Phase 1 - recovery, regeneration, rest, anatomical adaptation and General Physical Preparation(GPP), no conditioning
- Preparatory Phase- 8 mesocycles- GPP, basic strength, max strength, recovery, power/speed, power/speed/conditioning, max strength, pre-season.
- Competition Phase - increase power, speed, agility, stamina. "Strong athletes are healthy athletes." Short intense training sessions.
- "The annual training plan is the tool that guides training over a year. It is an essential component of periodization because it divided the training year into distinct phases with very specific objectives. An annual training plan is necessary to maximize physiological adaptations, which will improve performance. the annual plan directs the athlete through 12 months of training." (Bompa, 2009)

The clinic had a great lineup of presenters with a lot of good information. A big thank you is in order to everyone involved in pulling off this clinic. I look forward to going back next year.