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HOW TO GET THE MOST OUT OF YOUR **PRACTICE & CONDITIONING SESSIONS**

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START AT THE END

Football coaches are experts in the minutia. How far the first step should be. Where hands should be placed. How deep a middle-of-the-field safety should be on 3rd and 15. What's the tendency of the opposing team in 21 personnel on 2nd and 5 from the -15 yard line. It's often in these winding roads that we forget about the end destination.
Before any pen is put to a practice plan, one should start with the simple question: "What will determine if this year is a success?" Most likely, the answer is winning. It's true everyone wants to win. It's also true that at the higher levels of competition coaches need to win consistently in order to maintain their current location of employment. There are many factors that can go into winning (i.e. play calling, unforced penalties, pregame highlight videos),; however, the ultimate contributor is putting the best team possible on the field. The best teams can usually be characterised by whose athletes:

1. KNOW WHAT TO DO AND SKILLED ENOUGH TO DO IT

It doesn't matter if your freak athlete runs a 4.15 40 yard dash if he can't remember to run a slant at three steps instead of 10, or can't catch the ball the odd time its thrown to them.

2. ARE CONDITIONED TO LEVELS REQUIRED DURING GAMES

It also doesn't matter that your defensive tackle can squat 800lbs if they can't run onto the field before the play clock expires, or give effort for three plays.

3. HAVE A FULL TANK ON GAME-DAY

Like a seesaw, when the competition level raises, the talent disparity between the best teams and worst teams lowers. Consequently, the margin of error in a play, in a game, and in a season shrinks. The best team operates at the greatest capacity possible over the entire season.

4. ARE HEALTHY ENOUGH TO PLAY

If your critical players are not available for games, it probably didn't matter that they dominated most of fall camp.

Achieving these 4 key components begins with an understanding of the game and how the human body adapts and reacts to stress.

FOOTBALL ISN'T TRACK & FIELD

Whether it's a 100-meter dash, a triple jump, or 400-meter hurdles, track and field coaches know the specific activity for which they need to train their athletes. Before football coaches can plan a conditioning session, or script a practice, it is important know what the actual game requirements for each position are. Accumulating data from devices worn by the players is a phenomenal shortcut in achieving this information. A few of the many metrics that can be gained include the volume of work (i.e. player load), high speed efforts, quickness, and contacts.

In addition to this body-worn data, coaches can also use drive lengths, time between plays, and actions taken during plays to understand what's required for each position during the game.

Every team is different in the personnel, schemes, and tempo they employ. This variance is why there are few universal truths in identifying game demands for football. Understanding what your athletes are required to do in a game is the first step in optimally training them for competition.

FITNESS VS FATIGUE

Once in-game demands and intensities are known, we can set a weekly practice plan for use during the season. Let's say, for example, that a game exposes the starting defensive backs to a 600 PlayerLoad amount of work. In addition, each game requires around 40 high speed efforts (12+ mph) totaling 700 yards in distance. If these are their normal demands on game day, including special teams, it would stand to reason that achieving similar numbers a day or two before the game would not be ideal. The only gains that occur

a day, or week, before competition is fatigue. Athletes cannot expand their gas tank in such a short time frame, they can only burn the gas already there. The best teams are at their optimal capabilities on game day. Therefore, tapering practices as the game draws closer is vital.

The other side of the coin is that if athletes are not exposed to some of the game-like speed and volume demands in practice, then they are more likely to perform poorly, and be more prone to injury, during the game5,6,7. In general, having one practice that approached game-like demands early in the week (3-4 days before competition) with each subsequent practice decreasing about 25% from the previous one is a good starting point. This means the week would look something like this: ↓

DAY:	SUN	MON	TUES	WED	THUR	FRI	SAT	GAME
LOAD	OFF	300	600	450	300	0	600	2250

There are several variations of this template. For example, Thursday and Friday could be switched where Thursday becomes a walk through and Friday becomes a primer practice. Also, some teams may switch the off day from Sunday to Monday. The main idea, however, is that athletes begin to refill their gas tanks several days from competition.

Additionally, asking athletes to rate practice difficulty (often on a 0-10 or 6-20 Borg scale) can give us valuable insight into the intensity of practice and conditioning sessions4,10. Taking the reported number and multiplying it by the duration of the activity is useful to gauge the potential physical impacts a session has had. For example, if the reported team average was six6 out of 10 in intensity, and the practice was 120 minutes in length, the resulting impact would be 720 units.

Comparing movement data with perceived levels of difficulty (sRPE) can go a long way in understanding the actual workloads experienced by the athletes.

A common misunderstanding when discussing tapers is that the quality of work done in each practice should not diminish. The days with less workload are not days for athletes to go through the motions; every rep should be crisp and executed with the desired tempo and timing required by the coaches. What we are doing is reducing the quantity of work performed. Again, the only significant gains that can be made physically a few days before competition is fatigue.

Take, for example, the in-season week mentioned above. The total load volume experienced by an athlete was 2250. If said athlete maintained this weekly plan for four weeks, their chronic average would be 2250 per week. Now, imagine if that athlete had a bye week where practice looked like this:

DAY:	SUN	MON	TUES	WED	THUR	FRI	SAT	GAME
LOAD	OFF	800	600	900	600	500	0	3400

It's a bye week so no harm, no foul, right? Wrong. Scientifically speaking, the acute:chronic ratio for this athlete would have gone from 1.0 (i.e. 1:1) to 1.51. This 51% increase in activity would result in an increased chance of injury during the week and the next week3,9. The most common scenarios for a big jump in workload to occur is at the beginning of a new phase (i.e. winter conditioning and fall camp) and return to play following an injury.

CAMPING FOR SUCCESS

Too often, athletes' and coaches' exuberance has a long-term negative impact on performance. Fall camp is a time for great excitement; summer is over and the season is near. Athletes are champing at the bit to show the coaches why they should start, ; and coaches finally have the chance to install the brand new 3x1 sets they've spent all summer designing.

This also happens to be the greatest chance for injury, and the worst time to lose someone due to injury. Athletes often go from conditioning two or three times per week, to practicing six6 times per week, and often after a week off. This means we could see an increase in workload in excess of 200% over what the athletes have been chronically exposed to. Any injury in camp not only has an effect on the athletes ability to get ready for the season, but it also has a large potential to impact their ability to play in the first few games of the season. Since football is a sport with relatively fewer competitions, every game matters.

Therefore, it's important to gradually increase the physical demands placed on the athletes over the full course of camp. The alternative is having to modify practices and scrimmages late because the athletes are tired, sore, and dropping due to injuries. Some injuries are unavoidable. A defensive tackle may fall on, and subsequently blow out, an offensive lineman's knee. This may be an accident, however, it may also be due to the fact that the defensive tackle has practiced six straight days, three hours per day, resulting in a workload and intensity

far exceeding what he was used to during summer conditioning.

The five-day acclimatisation period in football attempts to curb the injuries resulting from early contact. What it doesn't account for is the addition of all the individual and seven-on-seven periods coaches add to replace the hitting. Consequently, the distances run by the skill positions during these "shorts" practices is often far greater than what they were exposed to during summer, and what they will be required to do in-season. This also places them at a greater risk of injury the following week, which just so happens to also be when the pads come on.

Using the weekly volume example from above, a fall camp calendar may look like this: ↓

WEEK:	SUN	MON	TUES	WED	THUR	FRI	SAT	TOTAL	% INCR.
WEEK 1	OFF	300	600	450	300	0	600	2250	12.5%
FC#4	OFF	300	600	300	300	600	OFF	2000	-10%
FC#3	OFF	300	600	200	400	200	550	2250	12.5%
FC#2	OFF	250	500	200	400	150	500	2000	11%
FC#1	REPORT	300	400	300	300	0	500	1800	0%

What this calendar attempts to achieve is a general progression in terms of weekly volume towards that required for the season. There is also a variation in the day-to-day workload exposures placed on the athletes so that they do experience game-like demands, but with the opportunity to recover so as to limit the injury potential of several high demand days in a row. Again, the lower workload days should be as crisp and fast as the higher load days; the only decrease is in volume.

The lower physically-demanding days could be a great time to instruct athletes via additional film and walkthroughs. Although a combination of the sRPE and movement data can provide concrete numbers for coaches to evaluate preparation, using previous practice scripts with this new eye for progression can begin the process of performance optimisation.

With the fall camp calendar established, we can now see the volume of conditioning needed during the summer to ensure that the transition to camp is appropriate. Use of the same gradual progression philosophy applied over the eight weeks of training should mitigate some overuse injuries that tend to occur during the summer as well. The same can be said for establishing winter conditioning guidelines to meet the demands of spring practice.

LOOK BEHIND THE CURTAIN

As coaches, we spend a lot of time in the details of our weight training sessions, conditioning plans, and practice scripts. So much so that they begin to feel like our intellectual property and a part of our identity. This kind of thinking can lead to stymied progress and missing the opportunities for athlete improvement. There are many good programs that have been developed over the years and passed down from head coach to head coach. These programs even have in-season tapering and general intensity progressions. However, there are too many that hang on to dangerous, less-than-ideal programs with the defense of "this is how we've always done it", and without objective data supporting their conclusions.

Good coaches are always looking to improve. Great coaches step aside from their ego and biases, and use objective data to critique their program.

How do we know if spring practices actually made the players better? How many practices were less than ideal, or missed completely, due to injuries? Tracking injuries and using an objective grading system can give valuable feedback to the efficacy of our current system. Constant self- and program-evaluation are the hallmarks of the best teams.

THE BRAIN IS THE FINAL FRONTIER

Believe it or not, all of the athletes in your program have a brain and body. The brain and the body are an inseparable unit. Fatigue in the muscles of the body affects the learning and emotions of the athlete. Similarly, the brain controls the muscle firings and football performance. Overtraining and inappropriate workload increases can contribute to health and performance symptoms such as11:

+ Chronic muscle soreness
+ Persistent fatigue
+ Increased susceptibility to infections
+ Increased incidence of injuries
+ Irritability
+ Depression
+ Burnout
+ Decreased aerobic capacity
+ Poor physical performance
+ Delayed recovery

If many of your athletes, especially your mentally strongest ones, are showing signs of irritability, poor attention in meetings, and constantly being sore, they could be experiencing overtraining. The problem is these

times of overtraining often occur during the most critical times of learning such as spring practice and fall camp. In addition, once a state of overtraining is attained, it can take several weeks to months for the body to recover11. Proper structuring of practices, with an eye towards recovery, can mitigate these "dark days" and instead provide more valuable and productive practices.

YOU'VE REACHED YOUR DESTINATION

A common misconception is that performing large volumes of activity creates injuries. However, having a large base of conditioning has been shown to mitigate injury occurrences and lessen their severity6. The issue often faced by coaches is how to properly expose their athletes to increasingly greater workloads so that they are able to achieve optimal fitness, practice effectively, and put the best team on the field when it matters the most. Generally speaking, increasing weekly workloads by a maximum of 15% from week to week will reduce the chances of injuries associated with fatigue. Additionally, adding a lower volume week (20% decreased from average) will allow the body to recover and make adaptations before the next increased period of work12. Given the fact that football seasons often span from August (camp) to January (postseason), the subsequent gains that can be made in conditioning over this time can be quite profound.

By combining physical (wearables), mental (surveys), and performance (evaluations) data, coaches can create the daily, weekly, and yearly plans that will ensure the optimal training environments for their athletes. Occasionally we, as coaches, need to stop the bus, pull out our maps, and make sure the roads we are traveling will actually take us to our destination. Then we need to make sure there is enough gas in the tank to get us there. There are few gas stations, or mechanics on the way, and it's always a race against time. As the legendary Coach Wooden said, "If you don't have time to do it right, when will you have time to do it over?".

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