

Cornerstones of Champions

By Dietrich Buchenholz

As a lot of you already know, reflexive-firing isometrics (RFI) and oscillatory-isometrics (OI) are two very powerful training tools. Aside from RFI being a direct "neuro-rate" development method and OI being a direct "neuro-duration" development method, both of them can be qualified as "short range of movement reflexive firing methods that exploit the benefits of the reactive regime." Both of them teach movement efficiency. Both of them yield a considerable rise in nervous system output (compared to their same-modality counterparts). And if it weren't for the "neuro-magnitude" modality, you could basically connect the two directly as being a continuum- with load being the obvious difference between them.

Think of it this way; RFI and OI work feed into proficient development of the reactive (REA) method of work (not to be confused with the general categorization of "reactive contractions"). Moreover, REA work is a great "feeder" into reactive-acceleration (RA) work- such as auxometronics (AMT). And as many of you have already experienced, AMT can be quite a jolt to your sporting performance!

So let's take a moment to examine these two "Cornerstones of Champions" a bit more- taking a closer look at what they are, what they do, and even discuss sub-methods for each.

Reflexive-Firing Isometrics

Reflexive-firing isometrics exploit the "plyometric effect" of movement proficiency- but so do a lot of methods! So, what really separates this method from others is that it teaches your system how to rapidly "turn on" and "turn off" via highly concentrated bursts of neuro-electric activity and tension recruitment, alternated with a proficient release of tension as it relates to "neural energy sparing." All of this traces back to intricate functions of the nervous system that make up contraction rate (CR) ability (i.e. this aforementioned 'rapid-fire' cycle)- interval rate (IR) and transmission rate (TR). That is, not only is it important to recruit what is needed, when it is needed, but the conservation-of-energy effects of this method perpetuate a longer terminal capacity function to be realized (i.e. how long you can keep up intensity of effort before realizing a drop in function).

You really don't have to look far to see all of this pan-out in the real-world, either. Take sprinting, for instance. How many times have you seen an athlete pull a muscle as he takes off in a sprint? Poor TR function (and/or poor neuro-dynamic patternization ability). How often have you seen an athlete pull a muscle in the middle of a sprint? More often than not, this is resultant from poor IR function (and/or poor neuro-dynamic patternization ability). In "The Sports Book: Best Training Ever!" I more accurately describe these deficiencies- TRP and RFP. Meaning, it is the onset of tension and the control of this tension (OTC) that will allow you to possess the sought after combination

of movement efficiency and movement proficiency. One without the other is like having cookies with no milk.

And in keeping with the same example; how long can you maintain peak sprint velocity before you begin to slow-down? Many sprint training "experts" will define this in seconds- 2 seconds, 3 seconds, and 4 seconds- and they base their opinion strictly off of what they observe- no more, no less. Well, that's all fine and dandy, but unless we all throw paper bags over our heads we are all still unique individuals (right?! I have seen athletes maintain peak velocity for 9 seconds, or more, and others struggle to maintain speed for even a few seconds. And the only way to know for sure is to test it out. And, remember, poor performance can just as much mean over-training as it does under-training, so you always have to associate the results as being relative to the athlete and relative to his training past and present. Instead of making the mistake of giving you a "cookie-cutter" guide to follow, let me do you one better. Bottom line is this- it's all manipulative! Just as you can make an athlete stronger, you can raise a sprinter's terminal capacity- how long they can maintain peak velocity. And you want to talk about putting theory into practice- try RFI work on for size!

Oscillatory-Isometrics

Similar to how RFI work is directly beneficial for a speed-seeking athlete and indirectly (supportive) beneficial for a strength-seeking athlete, OI is directly beneficial for a strength-seeking athlete and indirectly (supportive) beneficial for a speed-seeking athlete. Did I say all that correctly? Okay, good...now we can move on. Built on the same stone as RFI; OI work enhances onset of tension control (OTC), develops movement efficiency via the installment of energy conservation, yet still, it develops proficiency of neural output, magnitude of tension recruitment, and escalates force development. Quite a gift to come all in one package, wouldn't you say? And just like RFI, it's something that you shouldn't use all the time, but when you do, let's just say that you're not going to turn down the results! It will make your movement more efficient; meaning, terminal capacity can be raised. However, with the applications presented in this article, the first thing you'll notice is that you won't have to "maintain the strain"- you'll be able to blast through sticking points with a vengeance. This is because your system will learn when and how to "turn it on"- a little or a lot- in order to complete the lift with relative ease.

Release Methods

When "energy sparing" between contractions is sought out, this sub-method works wonders. It can be used with RFI and OI work, and it really taps into interval-rate and transmission-magnitude functions of the neuromuscular system. In order to accomplish this, it entails that a "peak relaxation" phase will lead into the "reflexive firing" phase of the movement. This will allow you to "rebound" out of the reactive contraction phase powerfully, yet, with little "voluntary" strain. Ever get badly startled enough while you were sleeping that it almost caused you to leap through the ceiling? Well then you know the powerful effects that can result in combining relaxation with reflexive-firing methodics! Think about it; when have you ever jumped that high before...let alone after

someone just whispered your name! In sports and training, we are talking about the optimization of the 'plyometric effect' via static-spring mastery.

RFI-Release Samples

- RFI-Release Stability Press: Lower yourself into mid-range push-up position on a mini-trampoline or a spring board. From there, you will essentially "run" in place with your hands, firing each hand into the tramp in rapid-fire sequence. Your goal is two-fold; don't allow your torso to rise or fall during which time you will move your hands as quick as you can.
- RFI-Release Squat Sprints: Same concept as above; squat down on a mini-trampoline into mid-range position with your heels high off the spring board. Then, without allowing your hips to rise or fall, quickly sprint in place, maintaining dynamic minimization of the plantar flexors.
- RFI-Release Lateral Raise: Sit down on a bench, grasp a dumbbell and raise it with your shoulder musculature so that your arm is in-line with your shoulders. From there, you will release the dumbbell. After the release, quickly raise your hand before chasing the dumbbell- this will further intensify the rapid-fire functions you seek. Catch the dumbbell and allow a quick but effective transition, of which proper absorption will cause the dumbbell to virtually spring back up to the start position on its own account (i.e. reflexive firing).
- RFI-Release Lateral Barrier Jump: Set a barrier at about knee level. Stand on one side to start. Keep your hips the same distance from the ground as you jump over the barrier and back, repeating this right-left-right-left-etc sequence as rapidly as possible. As you get going, you will find that it is most efficient to position your hips over the barrier and let your feet do all the moving from side to side- that is desirable.
- RFI-Release GHG: On a glute-ham machine, extend yourself so that your body is parallel to the ground. From this position, you will come up about 1/3 of the full range of motion for this movement, flex for an instant at that point, and then drop down into reaction. That is, you want to see how quickly you can perform repetitions in this limited range, with movement efficiency being found when you relax your system during the drop and "fire" it in harmony during reaction. (Note: proper reaction will spare voluntary effort on the positive stroke).

OI-Release Samples

- OI-Release Pectorals: Lay down on a bench with dumbbells in each hand, likened to "pec fly" position. Then as your arms are relatively parallel to the ground (or as high as you need based on your joint mobility) you will achieve basic OI principles: peak voluntary/isometric contraction (flex "stronger" than the weight demands), peak relaxation (relieve as much tension as possible...this will cause your feet/knees to fly up into the air), followed by a rapid, efficient reactive sequence (absorb, stabilize, rebound)- at which time your feet strike down to the floor. Each repetition will follow this exact sequence of events.

- OI-Release Elbow Extensions: With a neutral grip (palms facing) as you lay on your back in triceps extension position (upper arms perpendicular to floor, lower arms parallel to floor), you will achieve peak tension, peak relaxation, and efficient reaction for each rep induced. Range of motion should be only 1/4-1/3 of the total triceps extension range of movement.
- OI-Release RBR: On a reverse back raise (RBR), you will flex the weight up to parallel position. Then, achieve as much tension as you can, voluntarily, followed by a rapid release of as much tension as you can, which leads into the efficient reactive phase. If done properly, the only effort you should feel like you are expending is during the voluntary contraction phase- the rest should come almost automatically (i.e. efficiently) if done properly.
- OI-Release GHG: In parallel position on a glute-ham machine, perform the same sequence as noted in the RFI version except that you will contract much longer and stronger during the initial isometric phase for each repetition. The release during the fall will remain the same, as will the reactive sequence at the bottom. Again, movement range is only about 1/3 of normal (full range).
- OI-Release Split-Squat: Standing with a barbell on your shoulders, in split-squat stance (one leg in front of the other on the same plane), you will lower yourself so that you have a good stretch on your front hip and rear knee extensors and toe flexors. From that position, flex as strong as possible- beyond the requirement of the load. After that has been completed, release all tension (free fall), and then react out to the start position.

Manual Methods

In sacrificing transmission-magnitude a little bit, and in flushing interval-rate down the toilet, so to speak, you can drive-home transmission-rate ability as it relates to OTC with this sub-method, all in a way that will make other training methods that much better! Even though, neither manual RFI nor manual OI work are devastatingly effective by themselves, they were designed specifically to make other training methods more effective- so they really don't need to be a great singular method. For instance, on the "neuro-rate" side of the coin we may alternate manual RFI work with, say, RA work in order to increase the athlete's stability and muscle-stiffness so that his neuro-pattern development at the transition phase of the RA work will increase. Most of the time there are only two ways that we do this: 5 seconds of manual RFI followed immediately with 3-5 reps of RA work in the same set; or 5 seconds of manual RFI alternated with 5 seconds of RA for a total set duration of 30-40 seconds. The former combination is if the RA loading is of neuro-magnitude parameters and the latter combination is used when the RA loading is of neuro-rate parameters (note: the manual RFI loading is always neuro-rate). Likewise, we may do 5 seconds of OI work followed by 5 seconds of ISO work (and repeat this cycle as we please per set, 0-4 times), on the neuro-duration side of the coin, if we want to fine-tune our static-spring effect as it relates to strength development and/or peak force development (note: we may even use it as a distant build-up to sky-rocket power or speed development, too- it all depends on the athletes needs).

Manual-RFI Samples

- Manual-RFI Internal Rotation: lay back on a bench with your arm abducted 90 degrees, elbow flexed at about 90 degrees and with your arm externally rotated to about 90 degrees (i.e. forearm and upper arm parallel with ground). Strive to maintain stability in this position as a partner/coach quickly throws your arm down from the wrist as rapidly as you can rebound your fist back up.
- Manual-RFI External Rotation: sitting upright on a bench, abduct your arm 90 degrees, and flex your elbow 90 degrees so that your upper and lower arm are parallel or the floor with your elbow pointing out towards your side and your forearm directed in front of you. Try to allow as little arm movement as possible as your partner/coach throws your arm down towards the floor, with the force being applied near your wrist.
- Manual-RFI Bench Press: holding roughly 36-37% AW 1RM of your bench press in CJC position in the bench press, try and stabilize the bar as your partner/coach rapidly throws the bar towards your chest. Again, your goal is to not let the bar move. But, since bar movement is inevitable, you will try and spend as much of the set duration at the start position as your coach/partner tries to force you to spend as much of the set duration out of this position. Consider it a contest between you and your partner/coach; the less time you spend out of your start position, the more bragging rights you have left when the set is over- not to mention that your training effects will be that much better.
- Manual-RFI GHG: position yourself in a glute-ham machine so that you are virtually parallel to the ground. Then perform this exercise one of two ways, depending upon if you need more knee flexion or trunk extension development: (1) with slight flexion in your knees and with your partner applying force to your tail-bone, directed straight towards the ground, you will try and minimize knee extension movement as your partner/coach tries to maximize knee extension movement via applied force. However, these pulses of force should be performed as rapidly as possible (i.e. it's not a push versus pull match but, rather, a task of trying to get as many reps as possible in a set time frame); (2) force is applied at your upper back so that the greatest training effect will occur with your spinal erector and hip extensor muscles. Redundantly speaking, try and minimize movement as your partner tries to rapidly throw your torso down, in powerful bursts of applied force.
- Manual-RFI Abs: in HF Abdominals position, torso parallel to floor, you will stay as rigid as possible as your partner/coach applies rapid pulses of force to your sternum (or off-set version, etc). Again, quality is assessed by quantity- generally the more reps the better.

Manual-OI Samples

- Manual-OI Biceps: laying back on an incline bench, and elbows and shoulders flexed in a way that sets your forearm parallel to the ground, and as you hold appropriated-weight (AW) that signifies neuro-duration work (generally 63% AW 1RM or greater), you will try to not let your hands move as manual force is

applied to your forearms (close to your wrists) or on your hands themselves. Again, if you try and prevent movement then you will most likely achieve as many reps as appropriate, which will lead to you performing the skill execution correctly.

- Manual-OI Squats: in deep squat position you will have a partner throw you down from the hips (if hip and knee development is sought out) or from the bar (if upper back, lower back and abdominal development are sought out).
- Manual-OI Abs: similar to the RFI version, except that this time around you use greater appropriated weight (AW) for neuro-duration development.
- Manual-OI RBR: in parallel reverse back raise position; have secondary force applied so that you have to brace your hips into extension. The less movement you allow with the greatest applied force, the better.
- Manual-OI Bench: set the weight in the neuro-duration modality, and then fight against the force pulses applied by your partner/coach so that movement is minimized as much as realistically possible.

Final Notes

Even though all four methods develop static-spring functionality, they do so from intricately different "angles". For instance, the choice between manual versus release integration rests on the need for TRP development of OTC (i.e. how much energy sparing development is necessary or appropriate for a particular athlete and particular point in time). All four generally develop RFP (even though RFP is inherently greater with neuro-rate methodics than neuro-duration methodics). Another consideration for inclusion is based on how the work is integrated/structured in a workout (i.e. manual used independently or as a compound hybrid set). Which reminds me, RFI work is set up based on reps achieved per unit time- "failure" is not a major factor. OI work, however, requires that an "initial" set be determined from momentary fatigue/"failure" with a given weight within a desired time bracket. These principles result in RFI maintaining reps with a drop in time for AREG and OI maintaining reps with a drop in weight for AREG. Not only are these "cornerstones" essentially important for any athlete to integrate into his routine at critical stages within his training plan, but the coach can use these powerful tools as "diagnostic" tests as well (i.e. locate intricate neuro-dynamics profiles in order to determine what to train/develop next). Performance enhancement, injury prevention, and means for locating neuro-dynamic deficiencies...what more could you possibly wish for?