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THE PERFORMANCE MENU

(R)EVOLUTIONARY FITNESS
AN INTERVIEW WITH DR. ART DE VANY

BREAKFAST
THE CONUNDRUM OF CHAMPIONS

CAPOEIRA STRENGTH MOVES
WORLD CLASS KITCHEN
RECIPES FOR PERFORMANCE

JOURNAL OF NUTRITION & ATHLETIC EXCELLENCE

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INTRODUCTION

Welcome to The Performance Menu! Our mission is to help you optimize performance, health and longevity by providing the best information and support pertaining to nutrition and training. Foundational to this mission will be practical, time-efficient recipes that are friendly to Paleo, Zone, and cyclic low carb approaches. These recipes will bridge the gap between the theoretical—knowing what to eat—and the practical—how to actually do it.

Even armed with the guidelines from the October 2002 issue of the CrossFit Journal “Eat meat and vegetables, nuts and seeds, some fruit, little starch and no sugar...” there still exists the challenge of implementation. How does an active individual prepare tasty, healthy meals in a time-efficient manner? Stated another way, How do we turn nutrition guidelines into hot meals that fuel elite athleticism?

The Performance Menu will tackle the implementation challenge by consistently offering fresh ideas to assist you

in your lifestyle of health and fitness. We have adopted a unique position: All of our recipes will be Paleo in composition—grain, dairy and legume free—and for those following the Zone, we will provide nutritional breakdowns in blocks.

In addition to recipes, we will feature interviews, advice, and commentary from experts in a variety of fields. We will explore, debate, and challenge many ideas and methodologies central to health and performance.

World-Class Kitchen

You likely have all you need to prepare the recipes we will be featuring. There are, however, a few essential items that speed the culinary process:

- **Cleaver** Thin bladed Asian style
- **Chef knife** A good quality knife will last a lifetime. Find one that fits your hand comfortably.
- **Slow cooker** If you want a hot dinner waiting for you when you get home from work, you want one of these.
- **Pressure cooker** Stainless steel. Read the instructions carefully!
- **Food scale**
- **Blender**

Benefits of a Zone / Paleo Diet

- Increased insulin sensitivity
- Body composition improvement
- Increased antioxidant intake
- Sustained energy throughout the day
- Decreased inflammation
- Improved recovery

Why Paleo?

Some may argue that it is unnecessary to adopt a Paleo approach to nutrition for optimum health and performance. We strongly disagree. In simple terms, we are the product of our genetic heritage. As such, we are ill-equipped to deal with foods which did not exist until recently in our collective past. The Neolithic foods (grains, dairy, legumes) are problematic for many with regards to glycemic load and insulin tolerance, as well as gastrointestinal irritation and general autoimmune issues. This is to say nothing of high fructose corn syrup, trans fats and highly processed “Frankenfoods” that make for an alarming frac-

tion of modern dietary intake. These foods impart high caloric content at the expense of nutritional value. They are inadequate for health maintenance, let alone elite performance. It is our contention that the Neolithic foods pose a problem to anyone, given sufficient exposure. We will explore topics such as acid base balance, glycemic load and autoimmunity in future issues. For an exhaustive resource, please see Professor Lauren Cordain's highly informative website www.thepaleodiet.com.

In The Zone, Or In A Rut?

Out of the darkness of the high-carb, low-fat chicanery a voice of reason appeared. Barry Sears' *Enter the Zone* is perhaps the best single volume currently available on the topic of nutrition. Nowhere else can we find hormonal control, our evolutionary past, caloric restriction, and inflammation so accessibly explained. The Zone can be simplicity personified and has been foundational in the achievements of many of the CrossFit superstars.

Although it need not be the case, the Zone can also lead to a highly monotonous diet. Oat-

meal with an egg white omelet for breakfast, and cottage cheese, apples and macadamia nuts for three of the five recommended meals seem all too often to be the norm. While easily measured into the appropriate "blocks" we find the situation woefully lacking in variety, and perhaps one of the reasons for the lack of long-term adherence for all but the most dedicated of individuals. Not to belabor the point, but this also flies in the face of our Paleolithic perspective, both with regard to meal content and food variety.

Seasonality and Locality

We would like to put forth the concepts of seasonality and locality. Perhaps not imperative for elite-level performance, they are central to a Paleolithic and nutrient diverse diet. In the past, seasonality forced the issue of variety. Spring fruits were simply not available year-round. The easiest way to avoid the monotony of supermarkets is to partake of the abundance to be found at local farmer's markets. Here we find produce quality impossible to locate elsewhere. In addition, the seasonal fare that is offered will eliminate taste-bud boredom.

Essential Components of a Hormonally Intelligent Paleo Diet

Frequent small meals: 4-5 throughout the day

Protein: Palm-sized portion at every meal. Buy a food scale & find out how little 4-5 oz really is.

Keep carbohydrate consumption to vegetables and fruits: Choose in season and local where possible.

Eliminate processed foods: Although obvious when considering the food exclusions for a Paleo diet, it merits mention if only for eradicating confusion. Processed foods contain trans fats, high fructose corn syrup, and refined carbohydrates. They do not promote health and in no way enhance performance.

RECIPES FOR PERFORMANCE

Winter Fruit Salad

Time

20 minutes

Ingredients

- 1 medium blood orange
- 1 medium ruby red grapefruit
- 1 medium Fuji apple
- 1 medium Valencia orange
- 1 handful of fresh mint
- ¼ cup pecans
- Juice from ½ lime
- ½ tsp cinnamon

Makes ~ 6 Cups

Preparation

Coarsely chop pecans and set aside. Peel orange, blood orange, and grapefruit and separate into slices. The grapefruit will require some extra effort to remove the thick cortex. Chop each slice into fifths and



place in bowl. Cut apple into eighths and then cut into smaller bite-sized pieces. Add to bowl. Mince the mint and add to salad. Add pecans, drizzle with lime juice and sprinkle with cinnamon. Mix and enjoy!

Zone Blocks

Salad contains: 8 blocks carbohydrate, 4 blocks fat. 1.5 Cups contains 2 carb blocks and 1 fat block.

Garlic Mashed Cauliflower

This is a great tasting substitute for traditional mashed potatoes. We recommend using a pressure cooker for the sake of saving time, although steaming is a viable option as well. The amount of garlic we use is fairly moderate. For extreme garlic lovers add as much as you desire. If you're not combating vampires one may certainly reduce the prescribed amount.

Time

Pressure cooker: 10 minutes

Steaming: 15-20 minutes

Ingredients

- 1 large head of cauliflower
- 8-12 cloves of garlic
- Olive oil
- Black pepper and sea salt to taste

Preparation

Trim green leaves from cauliflower head and set aside. The leaves are not needed for this recipe, but don't throw them away! They are both tasty and nutritious and are a great side vegetable.

Cut cauliflower into florets and place in pressure cooker or steamer. Peel garlic cloves and add to cauliflower. No need to chop or mince the garlic as it will be mashed later. If using a pressure cooker add ¼ to ½ cup of water. Cook cauliflower until slightly soft. This will be 3-5 minutes in a pressure cooker, 5-10 minutes if steaming.

One may use a hand-held potato masher or electric beaters (for a creamier consistency) to mash. Add black pepper, sea salt and olive oil as desired.

Zone blocks

Every 200g of raw cauliflower yields 1 Zone carbohydrate block. Pre-weigh cauliflower to determine number of carb blocks in entire batch. Use olive oil to meet your fat block requirements, 1/3 tsp = 1 fat block. We have found that approximately 1 cup of finished mashed cauliflower yields 1 carb block.

WILD ALASKAN SALMON

Comprised of lean protein and significant amounts of omega-3 fatty acids, EPA and DHA, Wild Alaskan canned salmon (WAS) makes for a great quick meal. Factor in the ease and versatility and it instantly becomes a favorite. Whether a main course, or a quick snack on the go, WAS has saved the day on numerous occasions. Other reasons we love it: affordable, easily accessible and portable!

WAS can be enjoyed straight from the can or atop a bed of mixed greens. Included here are a main dish, two salads, and a breakfast recipe, all of which can be prepared and ready to eat in less than twenty minutes.

Where to cast your net

Those of you fortunate enough to live near a Trader Joe's may take advantage of their private label WAS which sells for \$1.99/14.75 oz. can. For those of you counting Zone blocks, this is sufficient protein for two 4-block Zone meals.

If Trader Joe's has yet to make it to a town near you, fear not! We have discovered a product equal in every way, Icy Point brand WAS. This product is available at our local Rite Aid drugstore, however one may find it at quite a number of locations (see www.oceanbeauty.com).

Wild Alaskan Performance Patty

Time

20 minutes

Ingredients

- 1 can Wild Alaskan salmon
- 36 almonds (roughly a rounded ¼ cup; or substitute 1 Tbsp Almond butter)
- 3 eggs
- Black pepper
- Dash of sea salt

Yields ~ 2 cups of patty mixture (4 medium-sized patties)

Preparation

Drain water from salmon and discard. Place the salmon in a mixing bowl. Using a coffee grinder or food processor, grind almonds to a rough paste-like consistency and add to bowl. Add eggs, pepper and sea salt. Mix thoroughly.



Heat a non-stick skillet with a little olive oil. Measure 4.75 oz or a rounded ½ cup of salmon mixture and form into a patty approx 4.5" in diameter (1/2 inch thick). Place in skillet and cook on medium heat for 5 minutes per side or un-

til golden brown.

Zone blocks

Total recipe yields: 12 blocks protein, 18 blocks fat.

- 1/6 cup = 1 block protein, 3 blocks fat
- 1/3 cup = 2 blocks protein, 6 blocks fat
- 1/2 cup = 3 blocks protein, 9 blocks fat
- 2/3 cup = 4 blocks protein, 12 blocks fat

We have constructed this recipe to reflect a 3X Athlete's Zone fat content. You may adjust this number up or down by altering the quantity of almonds.

Curried Performance Patty

Prepare as above, but add ¼ tsp of your favorite curry powder and omit pepper and sea salt. Let us know what other seasoning variations you discover on this theme!

Sesame & Ginger Salmon Salad

Time
10 mins

Ingredients

- 1 can Wild Alaskan salmon
- 1 head cabbage, red or green
- Ginger, 2" long finger
- Juice from 1 lemon
- Toasted sesame oil

Preparation

Finely chop cabbage (or shred in food processor) and place in large bowl. Mince ginger and add to cabbage. Add lemon juice to preserve freshness. Drain salmon

and add to bowl. Mix thoroughly. Add toasted sesame oil to taste.

Zone blocks

Prepare cabbage as above. Mix cabbage, salmon and sesame oil on a per-meal basis. When serving keep in mind that 2 cups cabbage = 1 block carbohydrate and 1.5 oz salmon = 1 block protein. 1/3 tsp sesame oil = 1 block fat.

Art De Vany's Lunch Salad

Time
10 minutes

Ingredients

- 1 can Trader Joe's Alaskan Salmon
- Lettuce
- Raw vegetables (cabbage, broccoli, cauliflower, etc)
- Garlic
- Fresh spices (ginger, basil, cilantro)
- Olive oil
- Balsamic vinegar

Preparation

Chop lettuce and vegetables. Add garlic and other spices as desired. Top with salmon and dress with olive oil and balsamic vinegar.

Zone blocks

2 cups of raw vegetables, lettuce, etc = 1 block carbohydrate. 1.5 oz salmon = 1 block protein. Construct salad to suit your carb needs and add appropriate quantity of salmon to meet protein block requirements.

BREAKFAST

THE CONUNDRUM OF CHAMPIONS

Everybody knows breakfast is the “most important meal of the day.” Despite this awareness, however, it seems to simultaneously be the most challenging, especially for the Paleo adherent. Grain-based cereals abound and flour- and sugar-laden pastries tempt us from behind glass counters as we order our morning coffee. Just getting out of bed, showered, dressed and to work on time is difficult enough; How does one make time for breakfast, let alone prepare something healthy that will provide the energy to sustain an active day?

Breakfast is important for all, but for the athlete who depends on physical performance, it is paramount. As such, breakfast ideas and suggestions will be an ongoing feature of this journal.

Being winter, we find it fitting to offer a Paleo version of traditional hot cereal. Warm, nourishing, and satisfying, when accompanied by the appropriate lean protein, this cereal will be foundational for your high-energy day.

Unless you are on the Athletes Zone with increased fat blocks this may be a bit fat intensive. For those following a cyclic low carb plan this may be your dream accompaniment to a salmon scramble. A double batch may be made and stored in the refrigerator for use throughout the week.

Nutty Hot Cereal

Time

10 mins

Ingredients

- 1 cup almonds or pecans
- 1 medium sized apple, quartered
- 1 Tbsp cinnamon (This will help increase insulin sensitivity)
- 1 cup water

Makes 2 cups

Preparation

Place all ingredients in blender and puree. Pour into medium sized saucepan. You may need to rinse the blender with an additional ¼ cup of water to get all the cereal. Bring to a boil. Reduce temperature immediately and allow to simmer for 5 minutes covered. If thicker consistency is desired, allow to simmer longer.

Zone blocks

48 blocks fat, 2 blocks carbs.
 ¼ cup = 6 blocks fat, ¼ carb
 ½ cup 12 blocks fat, ½ block carbs

Wild Alaskan Scramble

Time

10 mins

Ingredients

- ½ can wild Alaskan salmon
- 2 eggs

Preparation

Add salmon to a non-stick skillet with a dash of olive oil. Mash and break up the salmon such that it forms a thin uniform layer on the bottom of the skillet. Cook for about 2 minutes. Beat the eggs and add to skillet. Stir gently and consistently until done.

Fresh vegetables may be added to the

scramble for color, flavor and nutrient content. Be sure to start the vegetables first and cook the water down a bit to avoid a runny scramble.

Zone Blocks

Construct a Zone scramble according to your protein block needs. 1 egg or 2 egg whites = 1 block protein, as does 1.5 oz salmon. We have tinkered with a plethora of ratios ranging from a predominantly salmon scramble to a predominantly egg scramble. All are delicious. Here is an example of a 3 block salmon scramble:

- 1.5 oz salmon
- 1 egg
- 2 egg whites

Keep in mind that one whole egg also provides 2 blocks fat.

(R)EVOLUTIONARY FITNESS

An Interview with Professor Art De Vany by Robb Wolf

Professor Arthur De Vany is Professor Emeritus of Economics and Mathematical Behavioral Sciences at the University of California, Irvine. He has conducted groundbreaking research in many areas of economics, but is perhaps most noted for his work concerning decentralized, non-linear systems. Professor De Vany is an accomplished athlete with an extensive background that ranges from Olympic weightlifting to professional baseball. As early as 1995, Professor De Vany had synthesized a holistic approach to health and fitness that he called Evolutionary Fitness. Many people currently involved with the CrossFit community, including me, can trace their own fitness odyssey back to Professor De Vany's Evolutionary Fitness. We are profoundly grateful to Professor De Vany for sharing with us his work and insights.



Would you please elaborate on how you came to form your ideas about Evolutionary Fitness?

I would have to say that it just happened.

Like most truly complex endeavors, it is hard to identify a turning point or a key inspiration or insight. There are so many intertwined layers of science, learning, experience and so many different fields involved that I don't know at what point they came together. Nonetheless, key elements are my interests in complex systems (which was integral to my understanding of power law behavior and intermittency as components of human action) and my interest in evolution. My training as an economist was extremely helpful since it gave me the perspective required to understand how a decentralized system allo-

cates scarce resources in the self-organized human physiology. My interests in genetics and cognition also came into play as it led me to appreciate the key role of gene expression and how diet and activity alter what the genes express.

At the Institute for Mathematical Behavioral Sciences, my true home for the last fifteen years of my career, I was surround-

ed by cognitive scientists, brain scientists, mathematicians, statisticians, geneticists, biologists, and information scientists. These all come into play in evolutionary fitness.

I truly began living the Evolutionary Fitness Way in about 1985 when I started cooking more at home to make our meals more healthful. My wife is a Type I diabetic and by monitoring her blood glucose we found many foods tended to promote high blood sugar. As we cut them back, we began to eat a more plant-based diet with leaner meats. I began to cook with color and texture as my guides and the results were terrific. Lots of fresh spices with their high antioxidant content, and lots of fiber and variety.

I then began to rethink my training. I began working out more in the manner of, say, a Mike Mentzer or Hitter. But, that wasn't enough; it took too much time and was tiring. I experimented, relying on Astrand's wonderful text and my understanding of power law variation to find a more natural way to balance intensity with variety. The answer was the intermittent pattern that is typical of all playful activity: wild animals exhibit power law variation in activity (proven by monitors placed on fish and wild animals), and most sports like tennis and baseball are also power law distributed activities.

Would you please describe the Evolutionary Fitness lifestyle and explain how this approach might benefit performance and longevity?

Power law variation and intermittency mean that you don't live in a narrow frequency range: you do activities that are "all over the map," with no typical or standard activity. You have intense bursts of activity and lots of languid, easy moments. Modern life is a stressor, with too much standard activity and not enough variety or true peace. Remember, our species never had more than they could carry as possessions, yet they had the whole outdoors and the gifts of nature constantly

before them. Our minds are not made for the standardization of life and the quest of possessions; they can never bring true peace for that reason.

The mental peace that comes with this realization is powerful. An evolutionary perspective is truly supportive: I often laugh at myself for trying "accomplish" too much and tell myself that is just my genes talking. Remember, we are alive only because we carry the genes that got us here and they "care" only about their own reproduction. Thus, as males, we do many dangerous, demonstrative things in our youth, primarily to enhance the prospects of reproducing and sending our genes into the next generation. Women are susceptible to this as well, though it manifests itself in different ways.

As to longevity, an active lean body translates into a peaceful, playful lifeway and a powerful mind. Few people seem to realize that mind and body are one; there is no reality to Cartesian dualism. For example; children do not learn to speak if they are confined in such a way that they do not understand the force mechanics of movement, nor can they learn math unless they sense the physical relationships among things through movement. A healthy mind is the first requisite to longevity. A lean, muscular body prevents the brain from becoming resistant to the action of insulin and keeps it healthy and well-nourished. It keeps stress hormones, which are neurotoxic and cause diminished brain mass, at bay.

Body composition is one of the best predictors of longevity. Our male ancestors had about 11% body fat. Females were closer to 15%, just near the boundary where they may or may not be able to conceive. This kept population growth within bounds, along with other natural hazards. Thus, females had far fewer ovulations than a

modern female and aged less rapidly because nothing ages as much as reproduction. A lean, muscular body, say 6 to 10% for a modern male and up to 17% for a female promotes low insulin levels, a key hormone in aging. I am aging at a slow rate (I think) because my insulin is so low it is outside the range for the lab. Low body fat also guarantees low blood fats, most of which come from a person's own abdominal fat rather than from their diet. But, it is body composition, not just body fat that is the issue; one must have the right balance of muscle to fat to promote the hormone drives that keep you young and your brain well balanced and nourished. Your muscle is also part of your immune system (it functions as a reservoir of protein to proliferate killer cells when needed).

Would you please explain the concept of power laws with regard to training?

First, recall that a power law is a distribution of frequencies over intensities. Such a distribution implies that the most intense activities are few, but very high in exertion. The low intensity activities are the bulk of your activities, including rest and easy walking. I do a lot of easy walking as many scientists do; Einstein and Darwin are notable examples. So did Dorian Yates when he was Mr. Olympia. For hunter-gatherers, walking is the predominate activity, by far. Modern life leaves too little of this languid, easy, "I'm not going anywhere" kind of activity.

Second, there is no typical activity with a power law so things are not compressed into a narrow frequency range: all scales of activity occur with diminishing frequency at the higher intensities.

Third, the high intensities are really very high, but their frequency is low. Again, this is far outside the Normal distribution

modern life seems to encourage. If you look at hunter-gatherers again, you find that they expend about 2 to 2.5 times their basal metabolic rate in a day, most of this in a few intense bursts on the order of 10 or more metabolic equivalents. Office workers expend about 1.2 METS (equivalents of their basal metabolic rate). The hormone drives are vastly different for office worker or hunter-gatherer. The HG has higher testosterone, growth hormone, and lower stress hormone. Office Worker has many low level threats to which he/she cannot make a fight or flight response, and thus carries a stress accumulation that cannot be relieved. The HG has a higher threat threshold and does need the fight or flight response now and then. Still stressful, but the stress is periodically relieved through action with a consequent quenching of the adverse hormone profile induced by stress.

Routinized, lower intensity activities, even jogging, train the natural chaos out of the human heartbeat, making it less adaptable to stress. This pattern holds broadly for other physiological systems too.

If you want to read the research literature that investigates the ideas regarding power law training, do a search for intermittent training. You will find that it is very effective and has been studied by sophisticated scientists. This research is much harder to do than what one finds in investigations of aerobic training. That is because aerobic training is steady-state and the equations are easy to handle because they deal with equilibrium conditions. Intermittent, power law training is far-from-equilibrium training and much harder to analyze, as no steady state equations exist for intense activities that can only be sustained in brief bursts.

It is not wrong to suggest that aerobic,

steady state training is often taken to be the norm for training because it is studied most. And it is studied most because that is what researchers know how to do. The far more effective intermittent training is little known because the research is harder to do. So, it is the old drunkard problem: when asked why he was looking for his lost car keys under the street lamp, the drunkard replied, "Because that is where the light is." Aerobic training is heavily studied because that is where the steady state holds. It really is nonsense. The human body is a far-from-equilibrium open energy system to which a steady state analysis simply does not hold. Such an obvious point, but it took me a long time to figure it out and see why a lot of published research has an aerobic bias to it.

Do you see a departure between the requirements in preparing for elite athleticism versus the demands faced by our Paleolithic ancestors?

Only in the way skill enters into it might there be a difference. Some sports require such a high level of skill that they require many repetitive movements. It is known that hunter-gatherers also practiced a great deal. For example, young Eskimos used to be taught to throw at an early age and even had their shoulders stretched so they could throw harpoons from a seated position with great force and accuracy. No modern person compares to the skill and endurance of ancient Eskimos in kayaking or spearing. Iroquois Indians easily outlifted American soldiers in tests devised by a physiologist. Of course, that was in the 19th Century. Things are different now.

Few modern athletes will have the vision or bone density of our ancestors; hunter-gatherers have been noted for their ability to see the moons of Jupiter by naked eye,

to tolerate 50 degree temperatures naked without shivering, and to bite through iron nails. Their hearing and balance are exquisite. Remarkably, members of tribes express an almost pure type; they are similar in appearance and stature because they express their genes truly, without the alterations among modern humans that are caused by vastly different diets and lifeways. Moderns have altered gene expression greatly because we do things that vastly alter the messages our genes receive; hence, there is a very large difference among modern humans relative to the ancestral past. This would indicate that some modern humans might be better at some sports, owing to the large variation in types, but it also says that any randomly selected ancestor would be better at almost any physical task than a modern human.

One ethnologist visiting a tribe found that nearly all the males in the tribe could out sprint him even though he was a college sub-11 second sprinter. One of the games in another tribe consists of teams of men hoisting huge logs over their heads and running as far as they can go. Men of all ages participate. I have seen, on film, a New Guinea male who looks like an athletic Mike Mentzer; he had muscles on his muscles according to the speaker on the film. He "made his living" climbing great trees hunting sloth and other tree-dwelling animals. To see him go up a huge tree, fearlessly and effortlessly was mind-altering.

Your alactic and hierarchal sets are quite unique and have been found by many to be very effective. Would you please explain to our readers what they are, why you like them, and share some examples of practical implementation?

The hierarchical sets, one set of 15, one of 8 and another of 4 with increasing weight and increasing speed with no rest in between, are meant to go up the fiber hierarchy from slow to type II and I fast twitch fibers (the latter the fastest). The idea is to drop out the slower fibers with lighter weight and higher reps in the early sets, leaving the fastest, highest force type 1 fibers to carry all the load at the end. The last set also emphasizes the descending phase of the movement because eccentric movements preferentially hit the FT fibers. In addition, huge amounts of lactic acid are produced, a well-known promoter of growth hormone (GH). In addition, the genes in the muscle fibers “sense” the signal of acid or oxygen to determine whether to make fast myosin chains or slow ones. The lactic acid promotes gene expression for fast fibers. Oxygen promotes slow fiber expression. This makes sense, doesn't it, because something has to tell the muscle how to develop and it has to be a local signal, right there in that muscle fiber. This is an example of a decentralized signal that much of my economic research deals with.

It is this gene expression signaling process that hierarchical sets are designed to exploit. This process also explains how aerobic exercise promotes slow twitch muscle development and not FT development.

Alactic sets are a- or non-lactate promoting. They are done as a single rep, putting the bar down, resting 5 or 10 seconds and then doing another rep. This goes on for 2 to 8 reps. Doing a heavy weight just one rep does not produce lactic acid. But, it does use up the phosphates that fire the FT fiber. The 5 to 10 second pause between reps trains the ability of the muscle to regenerate the phosphates that fuel the FT fiber. So, you are training your recovery ability in response to intense effort. This is ac-

tually the key to endurance in many high intensity sports; it is quick recovery from intense moves, not aerobic endurance that counts in these sports. In addition, after the first rep in multiple rep sets a lot of the energy is supplied by tendon and muscle elasticity, so these reps are not as intense as the first one. It is always the first rep that is hardest in most exercises because you are starting a dead weight. So, alactic sets are extremely challenging and that is good. Finally, single reps let you handle very heavy weight without fear of failure and they stabilize the joints because of the static starting position.

In light of Evolutionary Fitness, what are your thoughts as to why brief, intense workouts elicit impressive gains in strength, power and endurance?

This is the pattern of activity to which the human genome is adapted. Through all of our evolutionary past, human physiology and metabolism adapted to a pattern of intermittency and fight or flight response. It could not have been otherwise until the advent of agricultural only 10,000 years ago. This is the pattern of activity that promotes the true expression of the human genome and produces the optimal body composition of our ancestors. To live otherwise is to cause the evolutionarily adapted genetic information to be expressed in unhealthy ways. Much has been made of the so-called “thrifty gene” as a cause of modern obesity. This is a genotype adapted to episodes of starvation that conserves energy and causes weight gain in a nutrition abundant modern world. I think this is turning evolution on its head. Humans are an active genotype, as activity was essential and obligatory to the acquisition of food. A prone-to-fat, thrifty genotype would not survive this environment and would be reproductively less successful than an active genotype.

So, modern humans may fail to achieve the activity to which the active genotype encoded by evolution in their genes is adapted. The result is faulty gene expression, obesity, and ill health. When food is abundant at virtually no energy cost, the tie between activity and nutrition is broken. Activity declines and energy intake increases; that is, the real thrifty genotype and gene expression is altered adversely.

Dr. William Kraemer of Pennsylvania State University has noted an inordinate neuroendocrine response from movements such as squats, deadlifts, and the Olympic lifts, particularly when they are performed at very high intensity. From an evolutionary perspective, why might this be? How do you feel we might best capitalize on this phenomenon to obtain optimal health and elite athleticism?

It is the Growth Hormone which the movements trigger as well as the whole body coordination under maximal neural stimulation. Each type of muscle fiber has a neural threshold that must be exceeded to fire. The slow twitch fiber has the lowest thresholds, the fast twitch I (if that is the designation you use) is next, and the highest threshold fast twitch II fibers fire last. These movements go right up the fiber hierarchy and trigger all the thresholds.

Many of our readers have noted an ability to gain lean muscle mass while consuming what would appear to be a calorie-deficient diet (Paleo/Zone). You have alluded to similar phenomenon with Evolutionary Fitness. Could you help our readers to understand some of the mechanisms possibly at play here?

Remember, caloric deficit is a steady state concept. Humans are almost never in caloric balance at a point in time, it is only through integrating moments of positive

and negative balance over a longer time period that any kind of caloric balance is achieved. So, caloric balance is an averaging concept that does not apply to shorter intervals of time. It happens that when you fast and engage in intense activity of very brief duration you signal the body to conserve protein. The signal is a high level of GH, which can promote a redirection of the body's resources to retain and develop its protein pools. Remember, protein circulates through the body, in and out, and the pool goes up and down. It is possible to take in less food and still deposit protein in muscle if you lower the rate of protein wastage. This is the role of GH: it is a strong signal to conserve protein and to mobilize fat for use as an energy source. Evolutionary times would require just this mechanism. Fasting triggers a maintenance function: fat is burned for energy and protein is strictly preserved unless it is required to produce glucose (gluconeogenesis) to fuel the brain.

Would you comment on intermittent fasting and its effect on health and longevity? Do you feel that intermittent fasting is completely at odds with achieving optimum performance or can it be successfully integrated with a high-level training program?

Intermittent fasting triggers protein sparing maintenance and gene expression that underlines repair processes. Fasting also triggers brief flows of stressor hormones, which make the body more adaptable to stress. Fasting in the context of activity on an intermittent basis has all the benefits of chronic fasting without its downside.

What are your thoughts on pre- and post-workout nutrition?

Before the workout, an empty stomach to maximize GH production. After, I eat a

normal meal (Paleo style) no sooner than an hour later. Usually, I hike, walk or shoot baskets after a workout. Absolutely do not drink “gainer” drinks or other high glucose supplements (they all are high in glucose). The sugar shuts down the GH response too early and we have already seen that muscle grows in a high GH environment, even in the face of brief caloric deficit. Body builders tend to have high insulin levels, even with their muscle mass soaking up the glucose. Partly, they promote this to grow and may even inject insulin to grow more. But, there is an awfully high rate of cancer among body builders and the longevity, though hard to judge since I can find no studies of it, seems rather low. Remember, things that make muscle grow, like high IGF1, 2, 3 and 4 levels also make cancer cells grow more rapidly. Cancer is just a maverick cell that doesn’t obey the body’s messages to cease.

Please describe “a day in the life,” training, meals, play, etc?

There is no typical day. There is some pattern, but lots of variety. Since I am now retired, it is almost not fair to describe my day and hard to do as well since I do whatever I wish. Presently, I am working out three days a week in order to rehabilitate some old injuries from sports. I am also working on core stability and dynamic stability and balance. Until the injuries cease to interfere with heavy lifting, I am doing fairly light weights but at a high pace and close to failure. I am using a trainer for the first time to check my form as my injuries have caused me to lose some form and it is helpful to have another eye to watch for a loss of form. He is very good and a stickler for form. It is nice to have someone help me do negatives in safety as I thrive on them. I am a primarily fast twitch mesomorph and respond well to eccentrics.

Do you have a favorite Paleo-friendly recipe to share with our readers?

Probably my lunch salad is my favorite. A can of Trader Joe’s Alaskan Salmon over a bed of lettuce, fresh spices, plenty of garlic and raw vegetables such as red cabbage, broccoli, and or cauliflower. I use olive oil and balsamic vinegar for dressing. These vegetables are not only cancer fighting, but they also block DHT (the prostate promoting metabolite of testosterone) and conserve testosterone by preventing it from being converted to estrogen. Remember, what you put in is not necessarily what you get. Inject testosterone and you get more estrogen and a shut down of testosterone production.

Finally, is there a timeline for the completion of Evolutionary Fitness?

Well, no. I have my doubts about how it might sell. If I do finish, which this interview is encouraging me to do, it will be to put this message out there.

Arthur De Vany

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Special thanks to Mike Minium, Greg Glassman, and Dan John for help preparing these excellent questions.

THE QUEDA DE RINS

AN INTRODUCTION TO CAPOEIRA STRENGTH MOVES

As part of using a lot of different tools, from various disciplines, and thus trying to achieve a more complete understanding and activation of human movement, I will present today a very old static position strength move, later to become part of some dynamic movement sequences, called Queda De Rins (pronounced Keda-Ji-Hins). The QDR is part of the basic floor work in Capoeira training, although today you can see it used in a lot of other sport-art disciplines like karate, break dancing, etc... Some of these were influenced by Capoeira, during the late 1970s, when it first came to the US.



Capoeira is an afro-Brazilian martial art more than 500 years old. It was created by the African slaves brought to Brazil by the Portuguese to work the land. The slaves had different backgrounds and came from lots of different tribes, each with its own unique rituals, games, musical instruments and even fighting styles. Through a



complex process of integration and mixture of those different African rituals, a process no one truly understands, Capoeira was created. Capoeira has gone through a lot of changes during its estimated 500+ years of existence, being both a traditional art as well as part of the open, change-welcoming way of the Brazilian people. Today, Capoeira is practiced worldwide, with schools all over the US, Europe, Asia, Africa, Australia, and even Israel.

The Queda De Rins

The meaning of Queda De Rins in Portuguese is “fall of the kidneys”—this is due to the positioning of one of the elbows being in line with the kidneys, and its use as a “save” from being taken down on your ass in some situations. The Queda De Rins is actually a very basic Capoeira move, which originated in the traditional Capoeira style—Capoeira Angola. It is usually used as part of the Capoeira Floreio—a low, floor

moving flow of movements used to get to a strategic advantage, or just for the sake of artistic beauty. The basic static holding QDR is only used for learning purposes, as later in the Capoeira training you start incorporating it as soon as possible into dynamic movement, passing through it, without stopping the flow.

Starting Out

The QDR is a three contact point balance move (Like a head stand), advancing later to a two contact point move only. (Like a handstand)

Stage I

Flex your strong arm, creating a 90-degree angle, while keeping it close to your body. Most people have their elbows just above the oblique muscles. Now take the elbow a bit inside the body, closer to center line, but keep the hand pointing straight ahead, with an extended, semi-supinated wrist.



Take the other hand and put it above the extended wrist, pushing the arm and elbow into your body, without letting the elbow slip sideways.

The most important thing here is the 90-degree angle, which will allow the force from your other hand and later your body weight to transfer up/down the lower arm, providing a support.

Stage II

Maintaining the last stage position, stand near a wall, and position your hand on it, maintaining the 90-degree angle between the wall and your arm. Your fingers should point to the side. Add the other hand, al-

most at the same height on the wall, but just a bit higher, the fingers should point to the other side of the first hand.

Put your head higher on the wall completing a triangle base of support, keeping your head turned to the side of the higher hand. You have just completed a QDR on the wall; This positioning should later be duplicated accurately on the floor.



Push off and on the wall 10-15 times, before releasing, and make sure you understand the correct positioning of each of the three contact points.

Stage III

Squatting low on your heels, put your hand on the floor beside you, not too far away, with the fingers pointing back. Start descending with the body sideways, using your arm, until the exact contact point of the body-elbow from the last two stages is achieved.



Add the other hand further to the side and a bit forward to your first hand, while descending with the head between those two contact points, and



to the back, those creating a triangle. Once you are secured in your new base of support, try getting first the further leg up in the air, while bringing the knee toward the space created between your three contact points.

Once one leg is up there, try bringing the other one close to it, creating a closed position. This is the simplest QDR, and the easier version. We call it Queda Fechada (closed QDR), because of the leg positioning.

Conclusion

Well, that's it! This is the basic QDR position, and the easiest one to learn. Further, more advanced positions and dynamic movements going in and out of the QDR are the following stages in the training evolution of this position.

Some points to consider:

* Due to a strong external rotation in the shoulder joint, make sure your shoulders are well warmed up before starting to "play" with the QDR.

* If you can't seem to get the legs "up there", try bouncing in and out of the position, while trying to correct your triangle base of support.

* For the ones who succeeded with the basic QDR, you can try the following positions, shown in the photos, like the one handed QDR and the flag QDR without the head support.

Future articles will show some dynamic sequences using the QDR as transition point in some strength-coordination-balance movements.



Ido Portal has been practicing Capoeira for almost ten years now. He is part of the first generation of Capoeiristas (Capoeira practitioners) in Israel, and one of those responsible for taking this art into the public's attention, participating in shows, TV commercials, newspaper articles in Israel, Brazil and world-wide. (<http://www.neviot.co.il/mpeg/naviot-45.mpg>)

By trying to achieve optimal results in his Capoeira training, a few years ago Ido entered a new path of exploration of the human anatomy, physiology, nutrition and the training process. He has participated in formal studies, getting his Strength & Conditioning certificate as well as a Nutrition Advisor certificate, although he credits his knowledge mainly to his own exploration and research, influenced by the world's leading experts in fitness and sports training.

Last July Ido opened up his two floor training facility in the port city of Haifa, Israel, where he conducts training, workshops and sports activities, using Martial Arts, Capoeira, and a well equipped professional strength training facility.

IN THE NEXT ISSUE

BOOK EXCERPT

An excerpt from the forthcoming book by World Champion lifter and thrower Dan John

WIT AND WISDOM

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THE GOLDEN RATIO

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