November 2010

Hello

After an extended break, INFORM is back.

With lots of new features and an easy to use format, INFORM can help with your professional development and keep you up to date with the ongoing development here at IF.

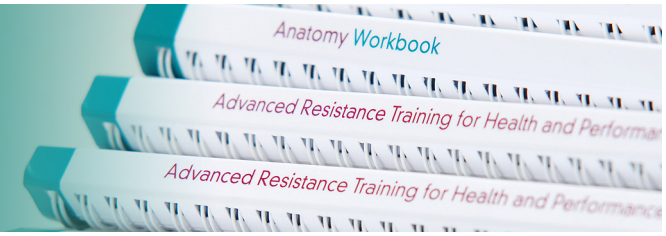
The new features **The Intelligent Perspective**, **Thoughts on...** and **IF News**, will join **Anatomy Focus** and **Nutrition Focus** to create a monthly newsletter that's well worth a read.

The substantial content of INFORM has been recognised by the REPs/Skills Active group as professional development. As such, digesting the articles each month can earn you 4 REPs cpd points throughout the year.

In the November 2010 Issue:

I trust you will enjoy your new INFORM.

David Wells



Functional Training!?

In gyms and parks throughout the land, we are witnessing a shift towards 'functional' training. That is, exercises that are ground based, proprioceptively challenging, involve 2 or 3 planes of movement, employ heavy clubs, weighted bags, kettlebells, ropes, ropes with balls on, or even suspension systems are quickly becoming the norm.

The labelling of these new (and old) exercises as 'functional' seems to have made them irresistible. By default, exercises such as the humble seated chest press, leg press or seated row are sadly regarded as non-functional and therefore somehow inferior.

Is this true? Are there criteria that must be met for an exercise to be classed as functional?

What the experts say

As the eminent Dr. Mel Siff maintained, there is no such thing as a functional exercise; it's only the outcome that's functional.

But what constitutes a functional outcome? For the majority of individuals, embarking upon an exercise regime, their desired outcome, or goals, are typically toning up, losing weight (body fat), generally getting fitter, increasing core strength and some even aspire to athletic events.

These 'typical' goals can largely be achieved by increasing an individual's capacity for work and their general fitness; this is 'general preparation' training. For those with more athletic aspirations their performance can best be improved through 'specific preparation' training.

Worryingly, the "functional' is best" mantra is increasingly applied regardless of an individual's goals, phase of training or ability. Improvements in general fitness would often best be achieved with humbler, less technical exercises. The development of strength, a key component of health related fitness, is reliant upon a certain intensity or resistance – this should be the focus of progression during the 'general' phase. In contrast, the 'functional' approach places the emphasis not on intensity but complexity.

Consider a slightly overweight and de-conditioned man

A leg press, seated row and seated shoulder press would provide maximum opportunity to achieve overload of some major muscle groups. The heavy resistances that can be safely applied will maximise the calorie expenditure of the workout, and help to maintain overall lean mass during a period of weight loss. On the other hand, a one-legged Romanian deadlift, or complex kettlebell exercise, whilst working a number of the sling systems simultaneously, are unlikely to overload in the desired way – their complexity will detract from the necessary intensity. Furthermore, how many individuals turn up on day one with the alignment and motor skills to perform the complex tasks accurately and safely?

It is often cited that the 'functional' exercises are superior in maintaining ideal alignment, good form, correct muscle firing patterns, motor skills etc. over the likes of a chest or leg press; this is unquestionable. But are they the tools of choice to achieve these capabilities in the first place? Probably not, there are a plethora of well documented techniques to stretch and strengthen before an individual attempts complex lifts which otherwise might exacerbate any existing musculoskeletal problems.

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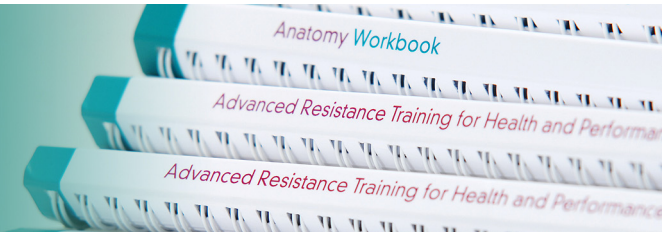

Considering the spinal loads

As the prevalence of back pain in the UK rises, the loads that are placed upon the spine, in the quest for health related fitness or athletic performance must be considered.

Compression, axial torque, bending stresses and shear can all play a part in positively adapting the spinal structures, but how much load can the 38 year old's spine take after 20 years bent over a desk? Many of the so called functional exercises impart some staggering loads. Whilst these may be appropriate in due course, it probably wouldn't be wise to start with them or work towards a programme that consists predominantly of high load exercises.

Do you know?

A straight forward press up imparts 1838Nm (Newton/metres) of compression to the disc at L3/L4. This is well below the figure of 3300Nm set by the National Institute for Occupational Health and Safety for safe repetitive loading.

Placing both hands on a ball; a common so called functional progression, increases the load to 2840Nm. Still below the limit for safe repetitive loading, but a 50% increase none the less.

Two further examples: a fast concentric press up – 3905Nm and a one handed press up – 5848Nm serve to demonstrate the 'load cost' of acceleration, deceleration and resisting axial torque, which many of the so called functional exercises require.

The delivery of so called functional exercise

Accepted practice in the industry is often fraught with problems. The delivery of so called functional exercise is no exception. For example:

- Individuals with varying requirements, exercising as a group, all attempting the same exercises makes a mockery of the specificity rule.
- Individuals with varying requirements, exercising individually with a trainer, all attempting the same exercises makes a mockery of the specificity rule.
- Conditioning circuits, a commonly used format, should be comprised of non-technical exercises that are safe as participants fatigue and lose form.

  Furthermore, any training gains will largely be in aerobic capacity and local muscular endurance to the detriment of strength and muscle mass, which are essential for most athletic activities. Remember, strength is the key, getting strong will help everything else; doing everything else won't make you strong.
- Finally, repeatedly applying a complex training method session after session simply won't deliver the gains a fully periodised programme can. It may however lead to over training syndrome.

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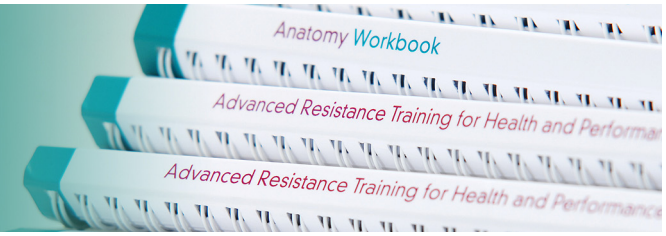

Should the public and athletes train alike?

The rise in so called functional training has also spawned the concept of athletic conditioning for all – "if it's good for the athletes' it must be good for the pubic"; there are endless reasons why this is not the case. But we'll stick to the main points that relate to this topic, specificity, form, motor skills and requisite general conditioning.

Your model athlete will already have a good base level of conditioning, so the strength is in place, the motor skills for their chosen activity are likely to be honed, and form during training is expected to be exemplary. Finally, their professional coach will have selected drills with appropriate movement patterns, velocities etc. The coach will also have planned which periods during an overall training cycle each training method should be employed.

Whether working out individually, or in a group, the public fitness enthusiast is likely to be attempting a generic set of exercises, similar exercises 2 or 3 times a week, every week. Their general conditioning, motor skills and technique may often be inadequate to complete the sessions safely, let alone realise the benefits. It's questionable whether the public enthusiast needs to undertake so called functional exercises to achieve their goals – remember the 'load cost' that accompanies many of them.

My point is unwittingly demonstrated by a leading supplier of functional training systems. A quick search on the web finds an official video clip of an athlete in training. The movement pattern seems to relate to his activity (my knowledge of grid iron is limited), his form is exemplary and he goes on to explain when, during his training, the drills are employed.

The very next clip is of a gym class. The usual suspects are present; there are rounded shoulders, pelvic misalignments and more than a pinch of excess body fat. When the session commences the purposefulness of the first video has been replaced by a cross between Morris dancing and the Hokey Cokey. It's no joke. This second clip is also an official video!

The suspects in the second clip are subjected to all the risks, possibly more as their form is not as good (putting it politely) and yet they stand to reap little in the way of benefit.

The intelligent perspective – key points

- Any exercise can play a role in achieving a functional outcome
- Exercises should be chosen carefully
- General conditioning can be safely achieved with general exercise
- Strength is a requisite for health related fitness and most athletic activities
- Strength is the key, getting strong will help everything else; doing everything else won't make you strong.
- Specific conditioning is best achieved though periodised programming
- Periodisation helps prevent overtraining
- Consider carefully the 'load cost' of each exercise
- Circuits should be comprised of non-technical exercises

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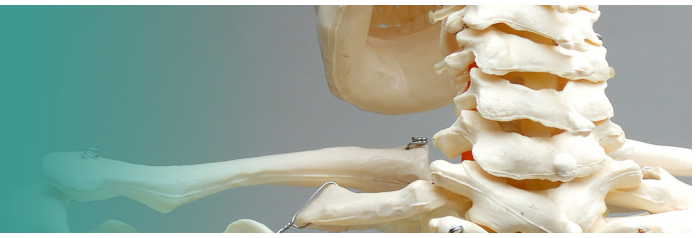
Anatomy Focus



Rhomboid Major and Minor Explained

The quadrilateral shaped rhomboids lie deep to trapezius on the upper back. Although considered as two separate muscles, major and minor act together with common actions.

The attachments and actions

Rhomboid minor, the superior of the two, runs obliquely and downwards from the spinous process of the 7th cervical and the 1st thoracic vertebrae to the medial border of the scapula at the base of the spine. The fibres of the larger rhomboid, major, run parallel with those of the smaller muscle. Its attachments simply follow on, inferiorly, from rhomboid minor; running from the spinous processes of the 2nd, 3rd, 4th and 5th thoracic vertebrae to the medial border of the scapula from the spine to the inferior angle.

Together the rhomboids retract the shoulder girdle, during which they produce slight elevation. Their line of pull allows them to return the scapula to neutral from an upwardly rotated position and they can also be thought of as scapula stabilisers – they fix the scapula in adduction when the shoulder is flexed or extended.

What the experts say

Although the rhomboids retract the shoulder girdle and play a minor role in scapula stabilisation, renowned authorities such as Kendall, do not recommend targeting the rhomboids with exercise.

Points to consider

As rounded shoulders are present to some degree in most individuals, it is to be expected that the rhomboids, as a shoulder girdle retractor, would commonly be found to be lengthened and weak. It is however, far more common for them to be strong, tight and dominant over middle trapezius during retraction – even when appearing to be held in a lengthened position.

Tightness and over activity in the rhomboids can cause discomfort, even pain under the medial border of the scapula. This hypertonicity can also lead to the inhibition of serratus anterior - a muscle vital to scapular stabilisation.

Whilst working the rhomboids cannot and should not be avoided in the long term, it is crucial to ensure that trapezius, particularly the middle and lower, portions, are functioning well before any retraction of the shoulder girdle is attempted.

Do you know?

Although the rhomboids are often quite capable of retracting the shoulder girdle, even against a resistance, their dominance is not desirable for either ideal resting alignment or dynamic stabilisation of the shoulder girdle.

Once adequate function has been ascertained or developed in trapezius, retraction can be completed in the knowledge that rhomboids have ‘accepted’ their synergistic role.

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Polyunsaturated Fatty Acids

Dietary fat can influence overall health: not only the total amount of fat eaten, but also the types of fats and oils consumed.

In our series of articles on 'fats' we will outline the facts about fats and detail the current UK intake and consensus recommendations to help you understand these compounds. An article will be devoted to each of the three main types of fats.

The fats and oils in our foods are largely composed of triacylglycerols which are formed from glycerol and fatty acids. It is the fatty acid components of these compounds that effect the physiological changes within the body which can impact upon long term health.

There are three types of fatty acids commonly found in our foods: saturated fatty acids (SFAs), polyunsaturated fatty acids (PUFAs) and monounsaturated fatty acids (MUFAs).

Fats with a high proportion of polyunsaturated fatty acids (PUFAs) are liquid at room temperature and even when refrigerated. Dietary sources of polyunsaturated fatty acids include: oily fish, flax/flaxseed oil and other nuts and seeds and their oils.

Do you know?

Polyunsaturated fatty acids are beneficial in terms of heart health as they help to reduce LDL cholesterol. However, they also reduce HDL cholesterol slightly so it is advisable for people who eat a lot of polyunsaturated fatty acids to consider substituting some monounsaturated sources into the diet

What the experts say

The Department of Health recommends that not more than 6.5% of food energy from polyunsaturated fatty acids.

It is worth bearing in mind that this recommendation was set alongside that for overall fat intake (33% food energy) and with an expectation that the UK public would continue to include saturated fats in the diet.

For an individual who consumes very little SFAs, PUFAs could reasonably (and beneficially) provide more than the above recommendation of 6.5% of food energy.

The current UK average daily intake of polyunsaturated fatty acids is 5.3% of food energy for women and 5.4% for men.

Essential fatty acids

Dietary PUFAs are a source of the essential fatty acids (EFAs): these fatty acids must be obtained in the diet as the body is unable to synthesise them. There are two EFAs: linoleic acid and alpha linolenic acid: omega 6 and 3 fatty acids respectively. Of key importance is the ratio of these essential fatty acids in the diet.

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What the experts say

Harvard School of Public Health recognise that omega-3 fatty acids are associated with many health benefits, including protection against heart disease and possibly stroke.

New studies are identifying potential benefits for a wide range of conditions including cancer, inflammatory bowel disease, and other autoimmune diseases such as lupus and rheumatoid arthritis.

Do you know?

The Department of Health recommends that the ratio of omega 6 to omega 3 fatty acids should be 5:1.

The current UK intake is closer to 8:1.

Most people would benefit from including more sources of omega 3 fatty acids in their diets

Sources of omega 6:

- sunflower oil
- corn oil
- nuts
- seeds
- cakes
- biscuits

Sources of omega 3:

- oily fish
- flax seeds and their oil
- hemp seeds and their oil
- walnuts

However, as with all aspects of diet, focusing on one specific element can be both misleading and may even progress to faddy eating and further imbalances in the diet. Thus an individual's consumption of polyunsaturated fatty acids should be viewed alongside their overall fat intake and, indeed, their entire diet.

Keeping sight of the overall picture is the art of successful nutritional communications.

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What do you think of fat?

Do you like fat, or are you repulsed by it? The stuff on the side of a decent lamb chop, or the soft bits a lot of us carry on our bodies? What about butter, the oily bases of skin creams and lotions, the delicate drizzle over olives, tomatoes and feta cheese?

We live in a culture that has been taught to despise fat, and with it, fat people. But can we as fitness professionals take this same line? Yes we have the scientific knowledge that if you cram an artery full of the stuff you'll die. Yes we know that if you are obese then you are more prone to life threatening illnesses such as stroke and diabetes, but this cultural obsession with fat goes much further than that.

Recently I saw two (slim) personal trainers with an i-phone application that could take a picture of someone, and then through the wonders of modern science make them look obese. These personal trainers were screaming with laughter at their pictures and saying things such as "oh that's gross!", "that's disgusting!", and I couldn't help thinking that this didn't show much respect or understanding for their clients.

I've heard people say "they've done it to themselves, so they've only themselves to blame". However, if we claim to want to help people change their lives, can we start from a position of despising them?

If we can't stand having any fat on our bodies, how can we care about people carrying several stone of the stuff?

If we think obese people are hilarious how can we take their needs seriously?

Hopefully as fitness 'professionals' we can step beyond cultural fads and face values, and get beyond the surface fat, to the things that, as human beings, really matter.

Andy Comley – Intelligent Fitness

2011 Training Dates

To help you plan both your professional development and your finances for the coming year we have scheduled training as far ahead as October 2011.

Take a look through the full listing and see what you'd like to attend. Remember, when booking ahead, a deposit will reserve your place until nearer the actual date

NEW – www. Intelligent-fitness.co.uk

Alongside the new INFORM, we are pleased to also have a new website. The new site includes:

- full descriptions of all our courses and seminars
- previews of many of the resource manuals
- training reviews from your peers

Take a look around at www.intelligent-fitness.co.uk

Andy Comley Joins the IF Team

Andy has worked in fitness for over 20 years, and holds qualifications in the science and management of health and fitness, sports injury rehabilitation, weight training, and sports science.

Each month Andy will invite us to look at our own practices and beliefs within the new 'Reflections on...'.

Your Training Reviews

Our new website has a section dedicated to training reviews.

If you have already experienced Intelligent Fitness training you are invited to post your own review.

New 03 Freephone Number

As so many of you call us from your mobiles, we have taken on an 03... freephone number.

So you can now contact us on the new **0333 000 1571** or **0800 408 1614**

Calls to 03 numbers cost the same as calls to landline numbers starting 01 or 02 - they are included as part of any inclusive call minutes or discount schemes in the same way as landline calls.

Earn REPs cpd Points - FREE

The substantial content of our INFORM newsletter has been recognised by the REPs/Skills Active group as professional development. As such, digesting the articles each month can earn you up to 4 REPs cpd points.

Throughout the year there will be four quick tests to complete. Each test simply checks that you've understood the key points within a number of the INFORM articles.

Here are a few example questions from this month's test:

Which of the following best describes the actions of the rhomboids on the shoulder girdle?

- Depression; during which they produce slight retraction
- Elevation; during which they produce slight protraction
- Retraction; during which they produce slight elevation

According to Kendal, which muscle should be dominant in retraction of the shoulder girdle?

- Middle trapezius
- Serratus anterior
- Latissimus dorsi

What does the Department of Health recommend as a target for the ratio of omega 6:omega 3 fatty acids?

- 5:1
- 6:3
- 8:1

All the necessary facts are contained in this month's Anatomy Focus and Nutrition Focus. Enhance your professional knowledge and earn points: Take a look at the INFORM library and all the current INFORM cpd tests.

www.intelligent-fitness.co.uk