

# ISOTRONIC – When only the best will do!

Comment from Professor Robert Newton on 31/12/2004 regarding Fitness Technology's Isotronic Hydraulic Equipment and Osteoporosis.



There is no doubt that any form of resistance exercise is beneficial for preventing or at least slowing the onset of Osteoporosis. There is no evidence to suggest that eccentric exercise is required. Purely concentric exercise as provided by your equipment will have the desired effect.

The stimulus is the total load applied but also rapid CHANGE in loading which I believe can be achieved through using the **Isotronic** equipment because fast, explosive movements can be performed \* as well as slow, high load movements but with safety.

Robert U. Newton Ph.D.  
Foundation Professor  
Exercise and Sport Science  
Edith Cowan University  
Joondalup WA 6027 Australia  
Email: [r.newton@ecu.edu.au](mailto:r.newton@ecu.edu.au)  
Telephone: 08 6304 5711  
Facsimile: 08 6304 5106  
Mobile Phone: 041 990 7774

Website: [www.chs.ecu.edu.au/~rnewton](http://www.chs.ecu.edu.au/~rnewton)



In recognition of his internationally recognized scientific research contributions, Professor Robert Newton was awarded the 'NSCA 2004 Sports Scientist of the Year'. This award was received in July 2004, at the National Strength & Conditioning Association's (NSCA) Annual Convention in Minneapolis USA.

For details on the NSCA refer <http://www.nscalift.org/Membership/WhyJoin/whatis.shtml>

## Glossary:

- Concentric** The mechanical condition in which the muscle torque is greater than the load torque and as a consequence the active muscle shortens. For example, picking up a weight / load!
- Eccentric** The mechanical condition in which the loads torque is greater than the muscle torque and as a consequence the active muscle is lengthened. For example, putting down that load! Potentially this phase has a much higher injury risk & is often associated with pin loaded & free weight resistance equipment.

**RE Quote: \* “as well as slow, high load movements but with safety.”**

With the unique **Isotronic** hydraulic equipment it is possible to achieve this essential resistance training requirement very safely because:

Only the Fitness Technology **Isotronic** Hydraulic Equipment has a dual independent direct pressure relief resistance control system, that enables a 'slow, high & constant concentric load movement' that can be performed 'with safety'.

### **The resistance advantages that Fitness Technology's Isotronic Equipment provides:**

- The other hydraulic systems commonly found in Fitness Centers are NOT 'dual independent direct pressure relief resistance control systems'. Consequently they can not provide 'slow, high & constant load movements'. These Flow-Control hydraulic Systems; Gas Struts; Pneumatic systems can not meet all of the requirements needed to perform these exercises correctly. Even if they have a high single dial load setting, they can NOT achieve the Isotronic performance. This is because with those systems, a slow movement equals a counter productive NON constant heavy load / resistance. Hence the slower one works with this equipment on their high load settings the lighter the load becomes. Consequently, these 'slow, high load movements' are not achievable.
- Pin loaded & free weight equipment can achieve these 'slow, high & constant load movements'. However it is more cumbersome to use. Plus it has a higher mechanical parts movement risk (like pulleys, cables, weights, etc.) The weight that goes up with this non Isotronic equipment must due to gravity come down. This eccentric load makes the risk of soreness and injury more likely. The scientific facts, as stated above by Professor Newton on Osteoporosis re 'eccentric' loads, means that the Isotronic systems provide distinct operational & safety advantage over all pin loaded & free equipment.
- The **Isotronic** anabolic resistance training programs enable new client markets to be pursued; that is, the chronic disease prevention & recovery market; including Osteoporosis and other preventable chronic diseases.
- For more information on Combating Chronic Disease with the **Isotronic** Anabolic Resistance Exercise program refer <http://www.fittech.com.au/products/isotronic.asp>

The results of further Edith Cowan University (ECU) Research using the **Isotronic** equipment should be available some time in 2005.

For more information on Fitness Technology's Products go to: [www.fittech.com.au](http://www.fittech.com.au)