Part 2. The Benefits of Strength Training

Part 1 covered what sarcopenia means and how to recover from injuries and inactivity. Part 2 is about the benefits of STRENGTH TRAINING. The focus is on getting and staying strong at any age!

For some time, researchers have known that strength training is effective at increasing muscle strength and size in younger people AND in --

- Older men (Frontera et al., 1988);
- Older women (Nelson et al., 1994); and even
- Nursing home residents (Fiatrone et al., 1994).

Strength training also has been shown to improve resting blood pressure, blood lipid levels, glucose utilization, digestion, and elimination. There is also evidence that strength training can alleviate back pain, ease arthritis symptoms, and relieve depression (Westcott & Guy, 1994).

You say, “Maybe that’s true for younger people, but not for someone as old as me!”

YES, you CAN get stronger! Here are some research examples.

“If losing muscle is the basic problem, then adding muscle should be the logical solution.”

~ Wayne L. Westcott, Ph.D.~

STUDY 1

Westcott, W.L., Richards, M., Reini, G. & Caligano, D. NOTE: This study was done at a senior residential facility in Orange County, FL. If they got results – YOU CAN TOO!

19 people (14 women and 5 men), average age 88.5, were involved in a 14-week strength training program. Prior to starting the program, their lower body and upper body strength and flexibility, as well as balance, gait and posture were measured. These measurements are similar to the ones you would do at the Center for Active Living (CAL fitness and function assessments) LINK. The number of falls during the study period was also measured.

Here are the RESULTS. *Remember, these were individuals who were, on average, in their upper 80’s!*

- All measures of strength improved
- All flexibility measures improved
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<table>
<thead>
<tr>
<th>Exercise</th>
<th>Pre-training</th>
<th>Post-training</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg Press</td>
<td>58 lbs.</td>
<td>105 lbs.</td>
<td>+ 81.2%</td>
</tr>
<tr>
<td>Triceps Press</td>
<td>37 lbs.</td>
<td>53 lbs.</td>
<td>+ 39%</td>
</tr>
<tr>
<td>Hip Flexion</td>
<td>29 degrees</td>
<td>44 degrees</td>
<td>+ 53%</td>
</tr>
<tr>
<td>Shoulder range of motion</td>
<td>100 degrees</td>
<td>109 degrees</td>
<td>+ 9%</td>
</tr>
</tbody>
</table>

Functional ability, measured by balance, gait and postural assessments, increased while the number of falls decreased. **NOTE: We have had similar results at CAL!**

**SO – what did people DO to get these results?**
They performed ONE SET of 8 – 12 repetitions of 12-15 different exercises with a weight load that produced *momentary muscle fatigue*. This means they recovered and were able to continue exercising in a short period of time (1-3 min.). [The exercises were similar to the ones we do in our Group Exercise classes and during Open Gym.] There were NO injuries associated with the strength training program. **NOTE: Several participants started with resistance bands and dumbbells in order to increase strength enough to do the exercises on machines.**

**CONCLUSIONS from this study:**
- Sensible and supervised strength training should be provided to people who are getting started with an activity program and/or are “getting starting again” after illness or injury.
- While you are never too old to begin strength training, it is advantageous to start sooner rather than later!

**More interesting information and helpful hints from research:**
- Comparing non-regular exercisers to exercisers, physical therapists Hatch & Lusardi (2010) found that people who had some trouble doing Activities of Daily Living (ADLs) but participated in wellness programming 2-3 times per week were “protected against” functional decline and falls. In other words, this group of people 85 years of age (+/- 6 years) either improved their ability to do ADLs or remained the same (didn’t decline). And, they fell less frequently that those who did not exercise.
- Venturelli et al. (2012) also found that a group of older adults (age) who did strength or resistance training (with elastic bands and dumbbells) improved their ability to do activities of daily living (ADLs). They also found that the exercise group maintained “cognitive efficiency” – which means focus and memory, while the control group declined. Maintenance of cognition is suspected to be a result of improved cerebral circulation and nerve cell regeneration.
- Porter, Nelson, and others from Tufts University (2002) studied the effects of long-term resistance training and detraining on strength and physical activity in older women. They
Kluge’s Korner

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found that even after 27 weeks (almost 7 months) of detraining, some effects of an 11-week strength training program remained. Westcott (2000) had similar results from a 10-week strength training program. **Neural adaptations account for maintenance of strength and the ability to COME BACK sooner.**

So, to summarize, **STRENGTH TRAINING is like “putting money in the bank.”**

Remember, WHEN you incur an injury or illness, the better your fitness levels and health status are BEFORE the injury/illness, the more you believe in positive outcomes, **AND** the more support you have from medical professionals, loved ones, and Wellness Staff at the HealthCircle at the Lane Center – the more likely you are to **“get off the sidelines and back into the game!”**

**Finally, what does ATTITUDE have to do with RECOVERY from setbacks?**

**EXPLANATORY STYLE** influences recovery (Selgiman, 1990).

Accidents and illness HAPPEN. There are 3 components of explaining good and bad events – The 3 P’s. When you explain something that happens, **Do you Personalize it? Do you allow it to become Pervasive? Do you think it will be Permanent? Good -- or bad?**

Be hopeful and optimistic by CHECKING YOUR ATTITUDE.

- Try NOT to blame yourself (Personalize) illness and/or injury
- Try NOT to think that a bad event will Permeate your whole life or be Permanent (last forever).

There is no doubt that bad things happen and that “doors close” on opportunity from time to time. HOWEVER, people who:

- perceive that they have control over their health status
- are regularly physically active
- personalize success and do not view bad events (or failures) as permanent, and –
- who keep both success and failure “confined” to the context in which it occurs, are more likely to –

Stay in it & **enjoy “THE GAME!”**

**COME TO THE HealthCircle clinics at the LANE CENTER.** We have ongoing AND NEW programs beginning this year that will help you develop a level of health and resilience that will KEEP YOU at the top of your “game” – whatever that is!