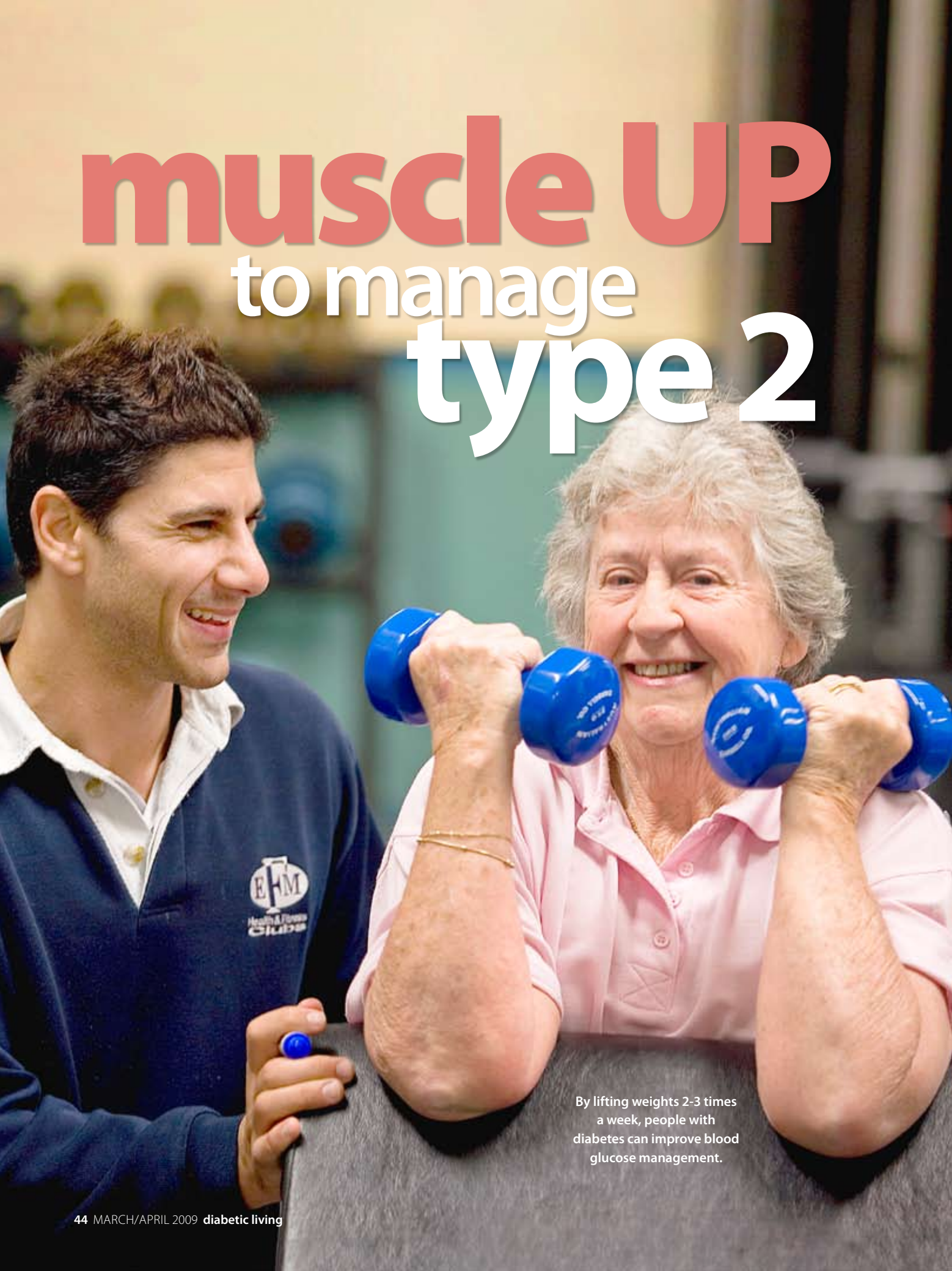
muscle UP to manage type 2



By lifting weights 2-3 times a week, people with diabetes can improve blood glucose management.


Coach Bolton

Pumping iron isn't just for body builders like Arnold Schwarzenegger. It's great for everyone, especially if you have type 2 diabetes or are at risk of getting it. So if right now you're thinking, no way – I'm too old to lift weights, our exercise expert, **Allan Bolton**, says you're probably the perfect age to benefit the most.

It's often thought we become less fit, less strong and shrink simply as a consequence of ageing. Getting older is only part of the reason for our physical and metabolic decline – at least some of the credit for why many people go to seed before their time must go to physical inactivity. In addition to the metabolic changes we experience as the years go by, we tend to move and lift less, so we become less strong, less mobile and less flexible.

The effects begin to show in the fourth decade of life when adults can lose three to five per cent of muscle mass per decade. This rate of decline increases to one to two per cent each year after the age of 50. This age-related loss of muscle mass is called sarcopenia. Losing muscle has a negative effect on both the development and management of type 2 diabetes. But the good news is that you can say no to sarcopenia. By doing regular strength training (also known as resistance training), you can maintain or increase muscle, stay strong and feel younger.

Why do strength training?

Strength training involves performing exercises against a resistance. You do it by pushing against machine weights, lifting free weights or working against gravity (such as in push-ups and squats), using elasticised resistance bands or even lifting a humble can of baked beans. Under correct screening and supervision, strength training is safe and effective for people with type 2 diabetes, including older people.

Over a decade of research by the International Diabetes Institute, now Baker IDI Heart and Diabetes Institute located in Victoria, has provided strong evidence that progressive strength training significantly improves blood glucose control in people with type 2 diabetes. Studies found that positive changes in blood glucose levels achieved through strength training equalled and, sometimes, exceeded results achieved using conventional drug treatments. While people of all ages stand to benefit from strength training, research has found that people aged between 60 and 80 years with type 2 diabetes will benefit significantly from it.

In addition to diabetes-specific benefits, being stronger will improve your quality of life by making life tasks that progressively become more difficult much easier. These include carrying your shopping or golf clubs, lifting your grandkids or simply getting up from, or down to, the ground when gardening. Keeping your muscle also helps with managing your weight.

How it helps diabetes

Increased physical activity and maintaining or increasing muscle mass has a lot to do with avoiding type 2, managing it successfully and slowing its progression.

Muscle is the body's largest reservoir of tissue requiring glucose uptake from blood. Maintaining or increasing muscle mass through strength training encourages your body to take up and make use of the glucose in your bloodstream. But regardless of how much muscle you have, glucose requires sufficient, effective insulin to navigate the journey from blood into muscle and other tissues. Strength training enhances this process by:

1 **Increasing the effectiveness** of insulin by increasing the body's insulin sensitivity.

2 **Increasing production** of the glucose-transporting protein GLUT-4. When stimulated by insulin, the GLUT-4 protein helps transport glucose from the blood into muscles.

WORDS ALLAN BOLTON

Having diabetes can get you down. Lifting weights empowers your mind and lifts your mood.

3 The strong muscular contractions performed during strength training stimulate the GLUT-4 protein to increase glucose transfer from blood to muscle independent of insulin's influence.

Without getting too complicated, it seems the old phrase 'use it or lose it' applies not only to our joints, but also at the cellular level where insulin does its job of getting glucose from blood into muscle.

All physical activity improves insulin sensitivity to some degree and benefits the management of type 2 diabetes. Strength training, however, has unique benefits beyond simply being more active. Moderate to high-intensity strength training (that is, lifting a weight you can only lift 8-10 times) programs can be designed to specifically target improvements and maintenance of muscle mass.

Through the Lift for Life program, researchers at Baker IDI have demonstrated that people with type 2 diabetes can improve average blood glucose

Strength training makes everyday tasks easier. It also

levels by seven per cent at three months and 14 per cent at six months, relative to starting levels.

Put simply, such programs make your muscles stronger, work harder, and use up more glucose for energy. Over time, this builds greater insulin sensitivity and glucose tolerance – key factors for improving blood glucose control and overall quality of life.

Home or gym?

If you're thinking about heading off to purchase a set of weights for the garage, please think again. The research gathered by Baker IDI clearly shows that after an initial period of coached supervision, people who continued to exercise in a structured, supervised program run in a community gym were better able to maintain their improvements in blood glucose control compared to those who go it alone at home.

I've overseen peoples' training habits for the past 30 years. In that time, I've witnessed many great intentions fade, with people left feeling exercise doesn't work. The research shows strength training does work as long as we can stick with it. The best way to achieve this and realise the benefits is through regular contact with well-informed, enthusiastic coaches or trainers using appropriate equipment. It's an added benefit if you can work out with a small group of people with similar objectives.

What's involved?

1 **To get the greatest benefit**, perform strength training 2-3 times per week. Once you know the drill, each session will take around 45 minutes. All up, that's less than 2-3 hours per week, including parking!

2 **Your program should include** exercises that target all your major muscle groups.

3 **Depending on how you go** with your initial screening and assessment, you might start out doing one set and gradually progress to three sets of 8-10 repetitions at a weight that cannot be lifted more than 8-10 times.

Don't go it alone!

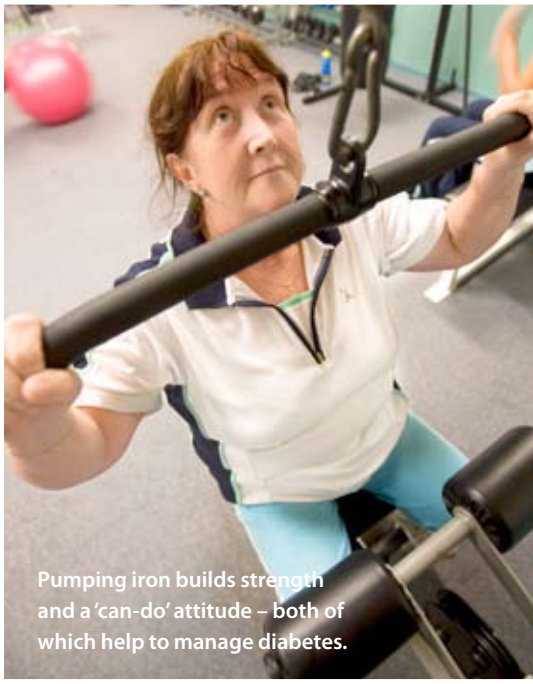
It goes without saying – always consult your doctor before beginning a new exercise program. Ask your doctor if he or she is connected with an accredited exercise physiologist. If they are not, you can search for one in your area at www.aaess.com.au or contact your state branch of Diabetes Australia.

If you prefer a one-stop-shop approach, contact the Lift for Life program on 1300 733 143 or visit www.liftforlife.com.au. They will put you in contact with a local trained provider who can answer any queries you have, organise your assessments and get you up and lifting.

If you choose to go with a personal trainer, be sure he or she holds Fitness Australia's Cert IV qualification and has 2-3 years hands-on experience. Also check they are happy and able to work with you, your doctor and your diabetes management team.

More benefits of pumping iron

- Better diabetes control.
- Happier head space and greater feeling of vitality.
- Increased muscle strength and tone.
- Healthier blood vessels.
- Faster weight loss and easier maintenance of these losses.
- Stronger, healthier bones.
- Better balance and posture.



Pumping iron builds strength and a 'can-do' attitude – both of which help to manage diabetes.

ABOUT COACH BOLTON

Having lived with type 1 diabetes for 30 years, Allan is familiar with the highs and lows of diabetes. With hundreds of sports endurance events under his belt, he has taken diabetes for some seriously hard test drives. This experience, combined with an exercise-science background, has given him great insight into managing type 1 during exercise, sport and day-to-day living. Allan is also a popular speaker in the corporate and diabetes arenas. For more about Allan's speaking, go to www.qualityhealth.com.au. For tools and advice to help you lose the confusion about exercising with type 1 diabetes, go to www.ext1d.com.au.

Got a question for Coach Bolton?
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helps you increase and maintain your independence.