MI FIT NEWS

Michigan Fitness Association

Fall 2024

EXERCISE IN THE MENOPAUSE TRANSITION

PLUS:

MFA ANNUAL CONFERENCE WRAP-UP

FITNESS PROFESSIONALS NEED MORE CLIENTS

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MICHAEL E. STACK, BS, ACSM-EP, ACSM-EIM, ACSM-PAPHS, CSCS
MFA SECRETARY
EDUCATION COMMITTEE CHAIR

Welcome to the October edition of MiFitNews, the dedicated voice of the Michigan Fitness Association. As we transition into the fall season, this issue follows closely on the heels of our first annual MFA conference held on October 17th—an exciting and transformative gathering for exercise professionals across Michigan. We look forward to bringing you a comprehensive report in our next issue, packed with key insights, discussions, and the forward-looking initiatives launched during the event.

In this issue, we are thrilled to present articles that touch on critical aspects of health, fitness, and wellbeing, reflecting our commitment to advocate for, educate, and empower the fitness community. One highlight is "Exercise in the Menopause Transition," a pivotal article that addresses the nuanced needs of women during this significant life stage. It emphasizes the creation of specialized training programs that enhance well-being through the menopausal years, offering practical advice on exercise modalities that mitigate symptoms and promote long-term health.

Also featured is "Is Strength Training the New Cardio?" This article challenges long-held views by asserting the vital role of muscular fitness in maintaining and enhancing overall health. It explores the interdependence of muscle strength on cardiovascular health, and highlights how strength training can prevent age-related decline, improve metabolic health, and increase bone density.

Beyond these feature articles, this edition includes a thoughtful update from our board chair, Bryan Rief, who outlines the current focus and future directions of the MFA. We also delve into "The Science of Music," exploring how the strategic use of music can significantly enhance the exercise experience, from increasing workout intensity to improving psychological endurance.

As we reflect on the enriching discussions and connections facilitated by our recent conference, and the wealth of knowledge shared in this issue, we are reminded of the critical role the MFA plays in uniting and elevating the fitness industry. Each piece of research, each expert opinion, and each member story contributes to our overarching goal of establishing exercise professionals as integral components of the healthcare delivery system.

Thank you for your unwavering support and enthusiasm. Your engagement is vital as we continue to advance our mission and make a positive impact on health and fitness in Michigan. We hope you find this issue of MiFitNews both informative and inspiring. Enjoy reading!

MICHIGAN FITNESS ASSOCIATION

SMALL BUSINESS Association of MICHIGAN

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BRYAN RIEF
MFA PRESIDENT

It has been 4 ½ years since we took that first step in forming the MFA, united in our goal to reopen our gyms and fitness centers here in Michigan during the pandemic. That initial step was just the beginning of a remarkable journey.

As we quickly realized, there is incredible strength in numbers. Together, we have worked tirelessly to craft a unified message for our industry, build a vision for a robust future, and engage with our state and federal legislators, as well as stakeholders like MDHHS. Each of these small steps has been essential in our journey to protect our businesses and foster growth.

> **"THE JOURNEY OF A THOUSAND MILES BEGINS WITH A SINGLE STEP."**
> –ANCIENT CHINESE PROVERB

While we've established a solid foundation, our future success truly depends on ALL of us actively participating in this process. We have an incredible group of business owners within our ranks, and it's crucial that we leverage this collective horsepower as we move forward—one step at a time.

I encourage all MFA members to get involved in any way you can. Your participation is vital to ensuring our success and the continued growth of our industry. Together, let's take the next steps toward a brighter future. Thank you for your commitment and dedication.

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EXERCISE IN THE MENOPAUSE TRANSITION

BY ELAINE ECONOMOU
MOVE WELLNESS

As exercise professionals, our goal is to meet the diverse needs of our clients at every age and stage of life. This often involves creating tailored training plans for specific hobbies or sports, such as cycling and tennis, as well as addressing particular health conditions like hip replacements or low back pain. Recently, an area of growing interest has been the development of specialized exercise programs for individuals navigating the menopause transition.

The menopause transition can span more than a third of a woman's life and often coincides with various health changes and concerns associated with aging. Developing a targeted fitness and movement training plan during this phase is essential for maintaining women's health and strength. With thoughtful considerations, exercise can help manage menopausal symptoms, reduce the risk of common chronic diseases, and enhance mental well-being. Exercise professionals play a vital role in guiding women to create training programs that foster longevity and overall wellness both during and after this significant life stage.

UNDERSTANDING MENOPAUSE

The first step in creating an informed exercise plan for this period in a woman's life is for movement professionals to understand some basic concepts about the menopause transition.

To start, the three stages of the menopause transition are perimenopause, menopause and post menopause. These stages are marked by changes in a woman's reproductive system, i.e. a decrease in ovarian follicles in the body. When the menstrual

cycle begins at puberty, women have between 300,000 and 400,000 ovarian follicles that have the potential to be ovulated and fertilized. The menstrual cycle is guided by a hormonal feedback loop system called the hypothalamic-pituitary-ovarian (HPO) axis. It is a complex process involving the brain and reproductive organs that impacts almost every system in the body.[i]

Perimenopause begins when sex hormones in the body (predominantly estrogen and progesterone) start fluctuating because there are fewer viable ovarian follicles capable of maturing. The normal age range of perimenopause is 35-45 and can begin up to ten years before a woman enters menopause. Because of this fluctuation there are no reliable tests for perimenopause and symptoms are unpredictable and irregular. One impact of this fluctuation is that menstrual cycles may become irregular and women may not be ovulating regularly. It is important to note that there are symptoms associated with perimenopause that are often missed or misattributed. For this reason, it can be a very confusing time in a woman's life and, as a result, many women are missing an opportunity to begin positively impacting their bodies and symptoms with exercise and movement solutions.[ii]

Menopause, the next stage in the menopause transition, is marked by the date of a woman's last menstrual cycle. This is when ovaries no longer have viable follicles, menstrual periods cease and estrogen and progesterone production diminish. Since a woman cannot know at the moment that it is her last period, a woman is officially in menopause one year later. On average, this occurs between the ages of 48 and 52.

After that, a woman is postmenopausal, the final stage of the transition. The body no longer has enough ovarian follicles to stimulate ovulation and therefore estrogen, especially a form of estrogen called estradiol, stays very low. Symptoms may ease during this time or for some, they worsen. Since women live on average into their 80s, some women will spend three decades in this phase of life. Notably, this stage is when women become more susceptible to chronic diseases such as cardiovascular disease, some cancers, osteoporosis, and dementia among others. [iii][iv]

The symptoms related to each of the stages of menopause are varied. **It is important to note that every woman's experience is unique**. The timeline for transitioning between the stages as well as the duration of symptoms is unpredictable. This uncertainty, paired with the fact that women typically carry a lot of responsibility during this phase of midlife, can make rigid fitness routines discouraging and potentially injurious.

This is where exercise professionals come in. The potential impact of increasing daily physical activity and an exercise plan emphasizing strength training, mobility and cardiovascular training cannot be overstated. [xi]A consistent practice during perimenopause, menopause and postmenopause can positively impact both a woman's lifespan and healthspan.

The following are some of the most common symptoms of menopause:

- hot flashes (also called hot flushes because they do not typically "flash" on and off)
- night sweats
- sleep challenges
- mood disturbances
- nervous system dysregulation
- headaches
- joint pain and stiffness
- fatigue and low energy
- back pain
- breast tenderness and pain
- vaginal dryness and pain
- heart palpitations
- difficulty concentrating
- Genitourinary syndrome
- pelvic floor issues
- brain fog

EXERCISE & MENOPAUSE

As exercise professionals we see how the phrase "exercise is medicine" is true for our clients every day. It is also clear that exercise is a key factor in prevention for many of the related issues and chronic diseases that impact women post-menopause. Improving muscle function, i.e. strength, power and endurance will mitigate the sarcopenia, or loss of muscle mass that develops as estrogen stores diminish in the body and can lead to chronic disease.[v] Nutrition is also an important part of the formula in menopause, as is managing each woman's unique symptoms. [vi][vii][viii][ix][x]

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emphasizing strength training, mobility and cardiovascular training cannot be overstated. [xi]A consistent practice during perimenopause, menopause and postmenopause can positively impact both a woman's lifespan and healthspan.

There is also an opportunity to impact a woman's *experience* of exercise and movement during this time. This sets the stage for a lasting positive relationship to her body, a commitment to an active lifestyle and the self-efficacy to reach her goals in becoming as strong as possible as she trains for a long healthy life.

Research that includes the impact of the menopause transition comprises less than 1% of published research. [xii] One of the few studies on menopause and the impact of exercise on symptoms looked at the connection between strength training and women who had moderate to severe hot flushes (about 7 per day) showed that there was a 43% reduction in symptoms after a 15 week program compared with a 2% reduction in the control group.[xiii]

In building a training program for longevity for women in the menopause transition it is important to consider the following fundamental guidelines. Note that many of the training recommendations for menopausal women are similar to those of the general population with a few considerations.

The recommended amount of weekly exercise for women in the menopause transition is:

- 150 minutes of moderate intensity physical activity such as brisk walking, cycling, rowing or swimming.
- 2 or more progressive strength training sessions per week (can be traditional weight training or bodyweight systems, Pilates, and GYROTONIC® exercise)

In addition to the above, fitness during the menopause transition should include:

- Increasing overall daily movement
- Functional mobility exercises focusing on joint mobility and stability
- Breathwork and pelvic floor exercises
- Balance exercises including foot mobility and strengthening exercises[xiv]
- Mindful movement and breathing exercises

FOSTERING ADHERENCE TO EXERCISE DURING MENOPAUSE

Finding movement and exercise that a woman in menopause enjoys can lay the foundation for a consistent habit. Prioritizing activities that are energizing, relaxing, or fun is more important than rigidity. Self-efficacy, as the secret sauce to creating lasting behavior change, comes from identifying achievable and meaningful goals. There is an invitation for women to vision and define meaningful goals for this phase of her life. In the menopause transition, women need to respond to whatever challenge is happening in their unique body on a given day, which can sometimes derail momentum towards a traditional fitness goal.

Many women have grown up with the mantra that cardio is key to maintaining a thin physique and that being as thin as possible is the goal of fitness. This complicated and damaging cultural imprint is very difficult to shed. Paired with the rapid and unpredictable changes to the body during this time can be frustrating to say the least. The goal as a fitness professional is to help your client reframe their viewpoint and focus on being strong versus skinny and to notice the positive impact of fitness and movement activities on the way their body feels on a daily basis. There is a worthwhile opportunity for us to help women frame their commitment to movement as a "long game" strategy, where the focus is on noticing its impact on these non-scale victories (NSVs) like daily energy, sleep quality, less anxiety or overall vitality.

PROGRAM PLANNING CONSIDERATIONS

The following considerations will help create a well-rounded and safe plan:

1. **Set a plan based on a client's movement history:** if someone has had a very active exercise plan and they enjoy high intensity workouts with no negative impact, there is no reason to change them. If someone has not been particularly active prior to this phase in their life, there is ample capacity to start now.
2. Start small and notice the small wins: when introducing a well-rounded workout plan, keep changes as simple as possible. Noticing the subtle signs of the impact of a workout or NSVs like less fatigue or a good night's sleep will help create an exercise program that can be maintained over the long term.
3. Longer recovery and recovery self-care: paying attention to energy levels and not working through pain. Prioritize active and passive recovery days. [xv] Low to moderate intensity plans for the active days and use other activities like massage, Epsom salt baths and gentle stretching before bed or upon waking as they appeal to the client for the passive days.
4. Responsive programming: have different plans available as backup when symptoms flare. If there was a sleepless night prior to a workout day, a strength training session might be contraindicated. Women should have plans available that they can choose based on their energy level for that day.
5. Resistance Training protocol: in general, avoid training to failure. Building progressive strength means "keep a couple in the bank" for each set. This practice can help prevent injury, maintain safety and minimize any recovery challenges. It is especially safer if there is osteopenia or osteoporosis, pelvic floor issues or any other contraindication.
6. Solid nutrition: there is evidence that a shift in nutrition in this phase of life plays a role in keeping a woman's body healthy.[xvi] Adequate protein and fiber intake, increased vitamin D and minimizing added sugars, alcohol and processed foods. Increasing protein intake will help maintain and build the skeletal muscle needed to prevent chronic disease. [xvii]The practice of bringing awareness to the relationship of what she eats to her symptoms will help her make choices that minimize their impact. For exercise professionals, general nutrition guidance is appropriate but guidance for specific issues or symptoms falls under

the category of medical nutrition therapy and should be referred to a registered dietician.

7. Pelvic floor support: when lifting weights stabilize the trunk with a lift up and in of the pelvic floor and abdominal wall instead of increasing intra-abdominal pressure, i.e. no Valsalva maneuver or weight belts, to avoid stress incontinence or other pelvic floor issues.
8. Mindful breathing session: teaching breathing techniques helps tone and coordinate support of the pelvic floor and calms the nervous system. This added tool in a woman's toolkit can support sleep issues, anxiety, heart palpitations, mood dysregulation and other symptoms of menopause.
9. Encourage clients to seek medical support for their symptoms: have a women's health referral network and refer out as needed such as to pelvic floor physical therapists if a client mentions stress incontinence or has any persistent hip or back pain that is not resolved with traditional physical therapy or exercise. Refer to a dietician for nutritional support for symptoms. Health protocol for symptom management is changing rapidly and there are increasingly newer and more options available.
10. Building community: connection is an important element in a woman's overall wellbeing during this time in her life. Because of the lack of awareness and education about the menopause transition, the impact of the symptoms and changes in her body and mental health can feel isolating. Find ways for women to build community and normalize the experience of menopause. Gyms and studios can support this with programming for women to work out together and building community.

TAKE HOME MESSAGE

In conclusion, the menopause transition presents a unique opportunity for exercise professionals to make a significant impact on the health and well-being of their clients. By understanding the physiological changes women experience during this phase and tailoring fitness programs accordingly, we can empower them to navigate this transition with confidence. Emphasizing strength, mobility, and enjoyable activities not only helps manage menopausal symptoms but also fosters a lasting commitment to physical activity.

As we guide women through this pivotal stage of life, it's crucial to prioritize adaptability and self-efficacy in their exercise routines. By encouraging a focus on building strength rather than on achieving a certain number on the scale and promoting a mindset centered around overall well-being, we can help clients redefine their relationship with exercise. Moreover, creating supportive communities where women can share their experiences can further alleviate feelings of isolation and encourage a shared journey toward health.

Ultimately, our role as exercise professionals is to instill a sense of agency and empowerment in our clients. By equipping them with the tools and knowledge to thrive during the menopause transition, we can support their health not just for today but for the decades to come.

Elaine Economou, NCPT, is the co-founder and CEO of MOVE Wellness, a premier Pilates studio based in Ann Arbor. She also leads the MOVE Pilates Instructor Training Program and is a certified menopause coaching specialist and wellness coach. Elaine is deeply committed to extending wellness beyond the studio walls through partnerships with healthcare professionals, nonprofits, sports teams, and fitness clubs, including collaborations with Trinity Health, Probility Physical Therapy, Cancer Support Community of Ann Arbor and Michigan Medicine. She serves on the board of the Michigan Fitness Association and volunteers for the Michigan Medicine Women's Health Leadership Board.

[i] https://www.hopkinsmedicine.org/health/conditions-and-diseases/estrogens-effects-on-the-female-body
[ii] https://pubmed.ncbi.nlm.nih.gov/38531011/
[iii] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10074318/
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MICHIGAN FITNESS ASSOCIATION

HEALTH AND WELLNESS

IMPACT AWARDS

The Michigan Fitness Association is thrilled to announce the Health and Wellness Impact Awards. This program celebrates innovative projects funded by the MFA Health and Wellness Enhancement Grant.

The awards recognize exemplary initiatives that extend beyond business objectives to significantly enhance the health and wellbeing of Michiganders, especially within marginalized or underserved communities. Submissions are evaluated on innovation, community engagement, measurable impact, sustainability, scalability, and health equity.

Cash awards up to $2,500 in multiple categories. Winners will be recognized at the 2025 MFA Annual Conference. Members will have the opportunity to vote on the winners. Submissions are due February 15, 2025.

CLICK HERE FOR DETAILS AND TO SUBMIT AN ENTRY

WINTER IS THE PERFECT TIME TO GET A GYM MEMBERSHIP

As the temperatures drop and snow begins to fall, staying motivated to work out can be a challenge. Winter's shorter days and colder weather can make outdoor activities less appealing, but it's actually the perfect time to commit to your fitness goals.

Let's explore eight reasons why winter is the ideal season to find a gym and kickstart your fitness journey. Along the way, we'll spotlight specific fitness classes you can join to meet people and stay motivated during Michigan's coldest months.

1. GET A HEAD START BEFORE THE NEW YEAR RUSH

Winter offers a prime opportunity to get ahead of the crowd. Many people wait until January 1st to start their fitness resolutions, causing gyms to become crowded with new members. By joining a gym in the early winter months, you can get a head start on your goals without having to deal with the New Year rush. Whether you prefer the calm of a yoga class or the intensity of CrossFit, you'll have more access to equipment, classes, and personal trainers before the gym gets busier.

2. BEAT THE WINTER BLUES WITH REGULAR EXERCISE

Seasonal Affective Disorder (SAD) affects many people during the winter months, making it hard to maintain a positive outlook and energy levels. Exercise is one of the most effective ways to combat the winter blues. Regular physical activity boosts serotonin and endorphins—chemicals in the brain that enhance mood and reduce stress. Joining a gym and developing a consistent workout routine is a great way to ward off the negative effects of winter.

Yoga: A Mind-Body Connection — Yoga is an excellent way to nurture both physical and mental well-being during the winter. The slow, mindful movements and deep stretches help improve flexibility, balance, and strength while also providing a calming mental escape. Yoga also reduces stress and anxiety, which can be exacerbated by the cold, gloomy weather. Whether you're new to yoga or experienced, winter is the perfect time to immerse yourself in this practice.

3. STAY CONSISTENT WITH INDOOR WORKOUTS

Outdoor running or biking can become impractical or even dangerous during snowy, icy conditions. Instead of letting the weather derail your fitness routine, join a gym where you can stay active in a safe, comfortable environment. A membership provides access to a variety of options: spin classes, rowing machines, treadmills, stairmasters, and more. Exercise safely, at your own pace, regardless of temperature or outdoor conditions.

Cycling: Keep Your Heart Pumping — Indoor cycling is a high-energy, low-impact workout that provides all the cardiovascular benefits of outdoor biking without the risks of winter weather. Cycling classes keep your heart rate up, helping you burn calories and build endurance. Many gyms offer cycling classes led by trained instructors who guide you through various intensity levels to match your fitness goals.

4. MAKE TIME FOR SELF-CARE DURING BUSY SEASONS

The holiday season can be stressful, packed with gatherings and social events. It's easy to put your health on the back burner but this is when you need self-care the most. Schedule time for yourself amidst the holiday chaos — choose the workout style that suits your needs, from the relaxation of yoga to the strength-building challenge of CrossFit.

CrossFit: Push Your Limits — CrossFit is a high-intensity workout that combines elements of weightlifting, cardio, and functional fitness. It's perfect for those who like to push their physical limits and want a fast-paced, challenging workout. The group environment fosters camaraderie and motivation, making it easier to stay committed to your goals, even when the weather outside is less than inviting.

5. MAINTAIN FITNESS DURING WINTER WEIGHT GAIN

Many people gain weight during the winter months due to holiday indulgences and a more sedentary lifestyle. A gym membership can help you stay on track and even prevent this. By incorporating regular exercise into your routine, you'll maintain your fitness level and boost your metabolism, keeping excess weight at bay.

Circuit Training: A Full-Body Workout — Circuit training is an excellent way to target multiple muscle groups in one session, making it a time-efficient workout option during busy winter days. By moving quickly between exercises with minimal rest, circuit training provides both strength and cardio benefits. You can always customize your circuits to match your fitness level, whether you're a beginner or a veteran athlete.

6. TAKE ADVANTAGE OF OFF-SEASON DEALS

Many gyms offer special promotions or discounted memberships during the winter months to attract new members before the New Year rush. This is the perfect time to sign up and save money while investing in your health. Whether you're joining for personal training or yoga, these off-season deals provide added value by helping you reach your fitness goals without breaking the bank.

Personal Training: Customized Fitness — If you're looking for a personalized approach to fitness, winter is a great time to hire a personal trainer. With fewer gym members vying for attention, you can get one-on-one coaching focusing on your unique goals and needs. Personal trainers can help you develop a workout plan, offer guidance on nutrition, and provide the accountability needed to stay motivated during the colder months.

7. INDOOR WORKOUTS CAN BE FUN AND SOCIAL

Winter gym workouts aren't just about breaking a sweat — they're also a great way to socialize. Group fitness classes like Pilates or CrossFit can create a sense of community and help you stay connected during a season when many tend to isolate indoors. These social connections can motivate you to stick to your fitness routine and make exercising more enjoyable.

Pilates: Strengthen and Lengthen —Pilates is a low-impact workout focusing on core strength, flexibility, and balance. It's an ideal option for a more relaxed yet effective workout. Pilates classes often have a calming atmosphere, perfect for those who want to unwind while still getting a solid workout. Plus, it's an excellent way to improve posture and body alignment, which can suffer from too much sitting indoors.

8. PREPARE FOR SPRING AND SUMMER ACTIVITIES

Winter is the time to lay the groundwork for the activities you want to enjoy in the spring and summer. Whether you want to improve your endurance for hiking, build muscle for outdoor sports, or simply look and feel your best when the warmer weather arrives, a gym membership will help you prepare. By joining a gym in winter, you'll have the opportunity to beat the winter blues, avoid holiday weight gain, and stay on track with your fitness goals. There's something for everyone at Michigan's diverse range of fitness facilities. Embrace the colder months as a time to invest in your health and well-being and you'll emerge stronger when spring arrives.

The MFA uses blog articles like this one to move Michigan's thousands of residents to members' facilities each month. MFA members can share these articles on social media or cut and paste them to your blog page: www.MFAfit.org/blog.

MFA ANNUAL CONFERENCE WRAP-UP

We are thrilled to share the first-ever Michigan Fitness Association Annual Conference, held on October 17, was a resounding success! Our goal was to embody our "STRONGER TOGETHER" theme, and we certainly accomplished that with the excellent lineup of education and the great group of people who attended. Highlights from the event include:

- **Engaging Speakers:** We were honored to host Dr. Renee Rogers to discuss Bridging Lifestyle, Obesity Medication and Surgery, Dr. Amy Bantham who presented on The National Exercise Referral Framework as a Bridge Between Healthcare and Exercise Professionals, and Lorraine Chapin who discussed Strategies for Success in Marketing Fitness Businesses.
- **Networking Opportunities:** Participants had the chance to connect with industry leaders and peers, fostering valuable relationships.
- **Interactive Activities:** Attendees enjoyed an interactive Q&A about the Importance of Advocacy for the Health & Fitness Industry and Roundtable Discussions which added an interactive element to the day.

Thank you to everyone who participated and contributed to the success of the MFA Annual Conference. We look forward to seeing you at our next event!


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IS STRENGTH TRAINING THE NEW CARDIO?

THE ROLE OF MUSCULAR FITNESS IN HEALTH

BY MICHAEL E. STACK, BS, ACSM-EP, ACSM-EIM, ACSM-PAPHS, CSCS
APPLIED FITNESS SOLUTIONS

For years, cardiovascular fitness was considered the epitome of what it meant to be healthy. Someone who could walk — or run — for miles was someone with a strong heart and lungs. That strong heart and lungs would help that person live a long and healthy life.

"The heart is the most important muscle of the body" is something that exercise and medical professionals have extolled for years—but what about all the other muscles in the body? Aren't they important as well? That answer is a resounding **YES,** and its causing exercise and medical professionals to rethink their paradigm around cardiovascular fitness being the most critical indicator of human health and functioning.

DEPENDENCE OF CARDIOVASCULAR SYSTEM ON MUSCULAR FITNESS

At its most fundamental level, in order for the heart and the lungs to be stressed adequately to make functional improvement, muscles have to contract to move the body. The better those muscles are able to contract (that is, the better "fitness" they have; go here for a more specific definition of muscular fitness), the more the heart and lungs will be able to be stressed, resulting in greater improvements in cardiovascular fitness.

Think of it this way: if you don't have adequate strength to get out of a chair, you're likely to sit more. If you don't have the necessary strength to walk up a flight of stairs, you probably won't do it. If walking to the corner and back is limited by the strength and stability of your leg muscles, you're probably not doing much walking. All of this means your heart rate is never elevated, your lungs are not forced to increase ventilation, and your cardiovascular system never improves—in fact, it declines.

With that said, you can almost view muscular fitness as the "rate limiter" for cardiovascular fitness. Weakness leads to less movement. Less movement leads to less cardiovascular stress, which leads to decline in cardiovascular function. While it's certainly true that the cardiovascular system is essential for assisting the contracting muscle in producing force (by delivering blood and nutrients and removing waste products), it's important to ask ourselves: what deteriorates at a faster rate with age and disuse and, furthermore, what is recoverable after deterioration?

If you examine the scientific literature, it can be difficult to parse out those two questions, as all functional capacities decline with disuse and age to some degree. That said, I would submit that cardiovascular fitness is much more quickly recoverable than muscular fitness, and also has built-in compensatory mechanisms that are fairly effective at masking decline. Consider that maximum heart rate appears to have a linear reduction of about 1bpm per year (with some variability), but cardiac output can largely be sustained at submaximal level by increasing stroke volume and oxygen/nutrient extraction at the tissue level. Stroke volume can be quickly recovered after a period of detraining due to simple mechanisms like increases in blood volume (the Starling Mechanism).

On the other hand, with aging and disuse, motor nerves can literally die off. Motor nerves are the structures that tell muscle fibers what to do, and the motor nerves with the greatest propensity to do so are the fast twitch motor nerves. Once these nerves die off, the fibers they innervate (the so-called "fast twitch" muscle fibers) tend to be reinnervated by slower twitch nerves, which results in those formerly fast twitch fibers functionally turning into slow twitch fibers. This is not a reversible process; it is permanent. These fibers now produce less force and power and are thereby less functional. Less force and more so less power means a reduction in functional abilities, decreased activity time, increased sedentary time, and increased risk of fall/fractures with age. All of this amounts to less stress on the cardiovascular system and a functional decline in cardiovascular capacity. When muscular fitness declines, it's a vicious cycle of less activity/movement that leads to more cardiovascular decline. One begets the other and we're left as a shell of our former functional self.

WHEN MUSCULAR FITNESS DECLINES, IT'S A VICIOUS CYCLE OF LESS ACTIVITY/MOVEMENT THAT LEADS TO MORE CARDIOVASCULAR DECLINE. ONE BEGETS THE OTHER AND WE'RE LEFT AS A SHELL OF OUR FORMER FUNCTIONAL SELF.

Furthermore, the cardioprotective benefits of strength training extends to the heart (and the rest of the body) by being able to accommodate higher blood pressures due to strength training, resulting in significantly higher systolic pressure compared to traditional cardiovascular exercise. This ability to accommodate higher blood pressures, improvement in functional capacity, and finally improvements in venous return (due to a great active muscle mass) in sum all result in significant improvement in cardiovascular health. It doesn't stop there, however, as strength training confers a whole host of other health benefits. I'll touch on some of the most significant health benefits below.

INCREASE BONE MINERAL DENSITY

Bones lose their density because we load them less and less as we age. With bone mineral density (BMD), certainly hormone status plays a role, such as the loss of estrogen during menopause, as does dietary intake of things like calcium and Vitamin D (for the most part, higher levels are associated with better BMD). But the most significant effect of bone demineralization is lack of loading of the bones, which can lead to osteoporosis or its subclinical precursor osteopenia. We load our bones when we do impact-based activities, like walking and running, but also when we put stress, tension, and strain on the bones when lifting objects. This loading stimulates osteoblast activity

in our bones. These are cells that literally lay down new bone. Less activity and less loading results in osteoclast activity, that breaks down bone, exceeding the osteoblast activity, with the net result being bone loss and reduced BMD.

Strength training is the ideal modality for loading bones, as it can place stress, tension, and strain on all the major bones of the body from different angles and positions, thereby maximizing BMD. If you think about how many ways you load the femur when walking, you'll find it's really one way. If you consider how many leg-based strength training exercises you can do to load the femur from different angles and positions, you'll find you almost have too many to count. Bottom-line: to improve BMD and reduce the risk of osteoporotic fractures in the spine and hip, strength training is the most efficacious vehicle.

TYPE II DIABETES

Diabetes is a significant problem with over 34 million American having Type II Diabetes (T2D). Another 84+ million Americans are pre-diabetic and well on their way to developing full blown T2D. Because disease management strategies for T2D are so effective, people can live for a long time with this condition. While this is good for longevity, it is very costly for our medical system. Cost for managing a newly diagnosed diabetic can range in the thousands of dollars per year. Treating end-stage diabetics (with retinal, renal, or neurological issues) can cost in the tens to hundreds of thousands. Cost aside, T2D can limit functional capacity, increase body mass and systemic inflammation, and predispose an individual to acute cardiovascular or cerebrovascular events (i.e., heart attack and stroke).

While overall physical activity and exercise have proven very effective in reducing diabetes symptoms (see the DPP for more info on this), strength training plays a unique role. One of the big hallmarks of strength training is some level of increase in muscle mass. Muscle is essentially the reservoir of carbohydrate in our body. Carbs either go to our muscles, our liver, or our fat cells when they need to be stored for energy use in the future. Liver carb stores are limited, and fat is clearly not an ideal place to store carbs. That leaves us with skeletal muscle as the best storage site for carbs. As we lose muscle (with age or disuse), we lose storage capacity. This can result in carbohydrates staying in the blood steam longer, causing vascular injury, insulin resistance, and hyperglycemia. The net effect of this is the diabetic cascade of events that increase cardiovascular disease as well as a slow death of our Pancreatic Beta Cells that produce insulin. Maintaining (or ideally increasing) muscle mass increases the gas tank for carbs in your body. This allows you to accommodate much more carbohydrate and reduce the likelihood of diabetes.

FALLS

Falls are one of the most debilitating events as people age. Even the fear of falling causes activity to decline, as the psychological threat of falling and injuring one's self is too great. Fear of falling causes reduced activity, which reduces muscle mass and cardiovascular capacity, which further causes function to decline (see above), and results in more fear of falling. This terrible cycle plays out until someone is nearly paralyzed by their fear.

If falls do take place, they can result in facture (often in the hip, arm, or spine) and head injury (concussion). Falls leading to hip fractures are particularly deleterious, as this outcome can be predictive of mortality in some individuals.

To not fall, once must keep their center of mass (located in the middle-ish of the torso) within their base of support (their two feet). When something causes us to get our center of mass outside of our base of support and we can't correct fast enough to get it back in there, we fall. Also, like when we stub our toe, we can often fall if we can't recover in time—more specifically we can't dorsiflex the ankle fast enough.

The ability to maintain stability on your own two feet is dependent on strength (co-contraction of muscles on both sides of a joint). The ability to recover from the center of mass getting outside of the base of support is dependent on power (or speed-strength). In essence, you have to have the power to contract muscles at a relatively high rate of speed with some decent force in order to recover quickly enough to prevent a fall. The only way to develop this capacity is to strength train

and to do so with heavy enough loads to get strong, and fast enough loads in order to be powerful. You can't train these capacities of strength and power any other way.

LOWER BACK PAIN

Lower Back Pain (LBP) can be one of the more debilitating orthopedic conditions an individual can encounter. Given the lower back's role in stability of the hips, spine, and scapula, pain and dysfunction in the lower back can limit nearly any physical activity. The prevalence of LBP is quite high, with upwards of 80% of Americans experiencing an acute incident of LBP in their lifetime. Further, at any one point in time, LBP may affect approximately 30% of our population. It is estimated that the annual cost of LBP exceeds $100 billion, with more than two-thirds of that cost coming from lost wages and productivity.

Although the causes of LBP are multifactorial in nature and a true etiology is nearly impossible to isolate, one thing is clear: common postures of daily life don't lend themselves to back health. We sit more now than we ever have. The result is a spinal alignment that is largely kyphotic (rounded forward). This postural alignment results in the elongation of the musculature on the posterior side of the body, which leads to progressive weakening of several muscle groups in the upper and lower back. Over time this results in the inability to effectively stabilize the torso in extension, thereby predisposing it to a whole host of potential spinal pathologies (that we can generalize as LBP).

Combatting postural issues is challenging because it's not likely our high volume of sitting is going to change any time soon. One of the most fruitful interventions for addressing postural issues as well as LBP is strength training; more specifically, strength training of upper body posterior chain musculature such as the lats, mid-traps, lower traps, spinal erectors, and other deep spinal stabilizers. In fact, research suggest that spinal erector strength improvements, facilitated by resisted spinal extension exercises, results in reduced LBP symptoms and prevalence of acute LBP episodes.

FRAILTY

According to the National Institutes of Health, frailty is a "*clinically recognizable state of increased vulnerability resulting from aging-associated decline in reserve and function across multiple physiologic systems such that the ability to cope with every day or acute stressors is comprised.*" In essence, frailty causes life to get very small very quick. Individuals with extreme frailty do not even perform some of the most instrumental activities of daily life (cooking, dressing themselves, personal hygiene habits). Even when not at that extreme, frailty still results in a decline in functional capacity that leaves life as a shadow of its former self.

While the aging process and frailty is complex, it is clear that the decline in muscular function (strength, power, and muscle mass) contributes significantly to frailty and functional decline. Age-related declines in muscle function are inevitable to some degree, but can be greatly slowed with strength training. In fact, research shows the preservation of strength, power, and muscle mass with age in the presence of a progressive resistance training program. Many studies have found that resistance-trained individuals in their 60s and 70s have the muscular fitness of untrained controls that are in their 40s and 50s. If you read that sentence again (and then one more time for good measure), you'll be astounded by its implication. Most specifically, strength training turns back the hands of time and makes you (functionally) younger. Now while I won't be hyperbolic and call it the fountain of youth, these are very significant findings. Furthermore, research also shows individuals can see positive improvements in muscular fitness well into their 90s, with the great improvements in muscular fitness coming in individuals who have the lowest muscular fitness to start.

PUTTING IT ALL TOGETHER

To optimize health, one must be physically active, get adequate sleep, and eat a well-balanced diet. Traditionally the physical activity category has largely focused on cardiovascular fitness and associated training modalities. While this emphasis is not incorrect, it fails to recognize the importance of strength training and muscular fitness on overall health. As we have seen in this article, there are many areas of health strength training will preferentially enhance over the improvement seen from traditional cardiovascular exercise. Clearly the ideal exercise program for health would include both aerobic exercise and resistance training. However, if you had to choose just one, the ever-increasing evidence continues to point towards resistance training.

Finally, for those interested in a more comprehensive review in the peer-reviewed literature, check out this article: The Benefits of Strength Training on Musculoskeletal System Health: Practical Applications for Interdisciplinary Care.

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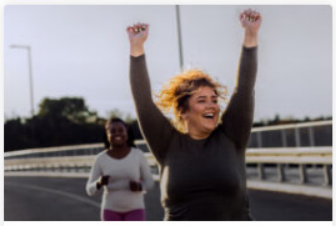

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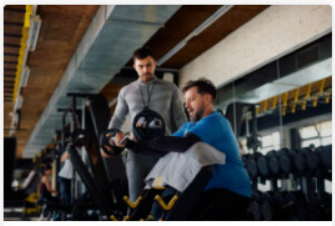

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In the coming months, we will release these as paid advertisements on social media. Each blog is designed not only to engage your audience but also to enhance visibility across search engines, helping members stay on top of the latest fitness trends and information.

WINTER IS THE PERFECT TIME TO GET A GYM MEMBERSHIP

Let's explore seven reasons why winter is the ideal season to find a gym and kickstart your fitness journey. Along the way, we'll spotlight specific fitness classes you can join to meet people and stay motivated during Michigan's coldest months.

CAN EXERCISE IMPROVE YOUR MEMORY? THE SCIENCE SAYS, YES

Everyone knows that working out is great for your physical fitness, but did you know that exercise is also good for your thinking ability? It's true. A growing body of research shows that exercise plays a crucial role in cognitive function, particularly memory.

7 REASONS TO JOIN A SPIN CLASS IN MICHIGAN

If you're still wondering whether this activity is right for you, here are seven reasons to join a spin class,

HOW MUCH DOES A PERSONAL TRAINER COST?

Hiring a personal trainer can be a game-changer for your fitness journey. Whether you're just starting or need help breaking through plateaus, trainers offer expert guidance tailored to your goals. But how much does it cost?

3 SURPRISING BENEFITS OF CIRCUIT TRAINING

The speed at which circuit training increases stamina and improves performance in other physical activities is its most

evident advantage. But beyond building endurance, many additional benefits to circuit training often go unnoticed.

THE 7 MOST POPULAR CROSSFIT EXERCISES

t's growing in popularity because it allows people of all fitness levels to challenge themselves while building strength, agility, and cardiovascular health. CrossFit offers a dynamic, community-driven environment that keeps you motivated.

WHY PILATES IS PERFECT FOR PEOPLE OVER 30

Pilates is an excellent exercise for individuals over the age of 30, offering a range of benefits that go beyond the typical workout. As we age, our bodies face new challenges—muscle stiffness, reduced flexibility, and joint pain are common issues.

12 TYPES OF YOGA + WHERE TO GO IN MICHIGAN

This guide will help you find a yoga studio in Michigan. We'll then discuss the fundamentals of different types of yoga classes.

WHEN IT COMES TO MOTIVATION, MUSIC MATTERS

Studies show that exercising to music has a positive effect on both mood and endurance, considering the limbic system that is responsible for emotion and your motor cortex, which controls movement.

BACKWARD WALKING: HEALTH BENEFITS AND SAFETY TIPS

Backward walking, or "retro-walking," is emerging as a promising fitness trend, gaining attention on social media platforms like TikTok for its potential health benefits. Fitness professionals and gym enthusiasts are increasingly incorporating this unconventional exercise into their routines.

BIG STEP FORWARD FOR MICHIGAN'S EXERCISE PROFESSION!

Exciting news! MFA's public education and political efforts pave the way for growth and innovation in the state's fitness/wellness industry. At its fall conference, members learned how their facilities can benefit.

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Board of Directors Meeting.....December 16
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