Austin Tri-n-Run Coaching

RUN-N-TRI OUTFITTERS

Mastering Masters Triathlon & Running

Staying fit and getting faster after age 40.

John Austin

IRONMAN CERTIFIED COACH

RRCA ROAD RUNNERS CLUB OF AMERICA COACHING CERTIFICATION

USA TRIATHLON CERTIFIED COACH

Questions to Address

- Who is John Austin?
- What is a Masters athlete?
- Aren't there better ways to spend my time?
- What changes as we get older?
- How does aging affect performance?
- What do we need to do to best maintain or improve performance as we age?

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John Austin - Endurance Sports Background

COACHING

2015 and 2016 : Granite Falls Athletic Club – Run and Triathlon Club Coaching

2015 : Personal coaching for 3 Athletes – Olympic Distance, First Half Iron Distance Race, First Full Iron Distance Race

2016 : Currently coaching runners and triathletes – marathon, IRONMAN 70.3, IRONMAN

COACHING CERTIFICATIONS :

- IRONMAN
- USAT Level One
- Road Runners Clubs of America

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COMPETING

Running :

- 230 Races since 1989
- 41 Marathons
- 10 Boston Marathons : 1992 to 2015

Triathlon :

- 129 Races since 2002
- 20 Half Iron Distance races
- 5 IRONMAN races
- ITU Duathlon World Age Group Championships : 2009, 2010
- ITU Triathlon World Age Group Championships : 2009, 2012, 2014
- IRONMAN 70.3 World Championships : 2010, 2013
- IRONMAN World Championships : 2014, 2016

USA Triathlon All American Athlete
IRONMAN All World Athlete

What is a Masters athlete?

mas·ter
/ˈmastər/

noun

1. historical
   a man who has people working for him, especially servants or slaves.
   "he acceded to his master's wishes"
2. a **skilled practitioner** of a particular art or activity.
   "I'm a master of disguise"

adjective

1. having or showing very **great skill or proficiency**.
   "a master painter"
2. main; principal.
   "the master bedroom"

verb

1. **acquire complete knowledge or skill** in (an accomplishment, technique, or art).
   "I never mastered Latin"
2. **gain control** of; overcome.
   "I managed to master my fears"

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What is a Masters athlete?

- Most typically, Masters athletes are competitors 40 years of age or older (35 for World Masters Athletics – Track & Field)
- Competitors are divided into age groups- typically 5 years apart (eg. 55-59)
- Other terminology you may see :
  - Grand Masters (50-59)
  - Senior Grand Masters (60-69)
  - Veterans (70+)

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Where do Masters Runners & Triathletes come from?

- 39 year old Runners & Triathletes
- Swimming, Cycling, or Running background – often after many elapsed years
- No endurance sports background

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Why Endurance Sports?

Improved Health

- Longer Life Expectancy
- Lower blood pressure, cholesterol, blood sugar
- Improved Quality of Life

"Aerobic endurance sports resulted on average in a 4.3 to 8.0 years higher life expectancy …. compared to that for normal physical activity."

Source: C. D. Reimers, G. Knapp, and A. K. Reimers, "Does Physical Activity Increase Life Expectancy? A Review of the Literature," Journal of Aging Research, vol. 2012, Article ID 243958, 2012, 2.

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Why Running & Triathlon?

Lifestyle

- More time as children become independent or with full or part-time retirement
- Friends and social network
- Change of pace / stress relief – gets you out of the house or office
- Activities in multi-sports provides more variety and flexibility than a single sport

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Why Running & Triathlon?

Accomplishment

- Ability to set and achieve goals
  - Finishing
  - Getting Faster
  - Going Longer
- Competitive excellence (Age Groups)

The size of age groups at races falls off significantly at ages of 50 and over.

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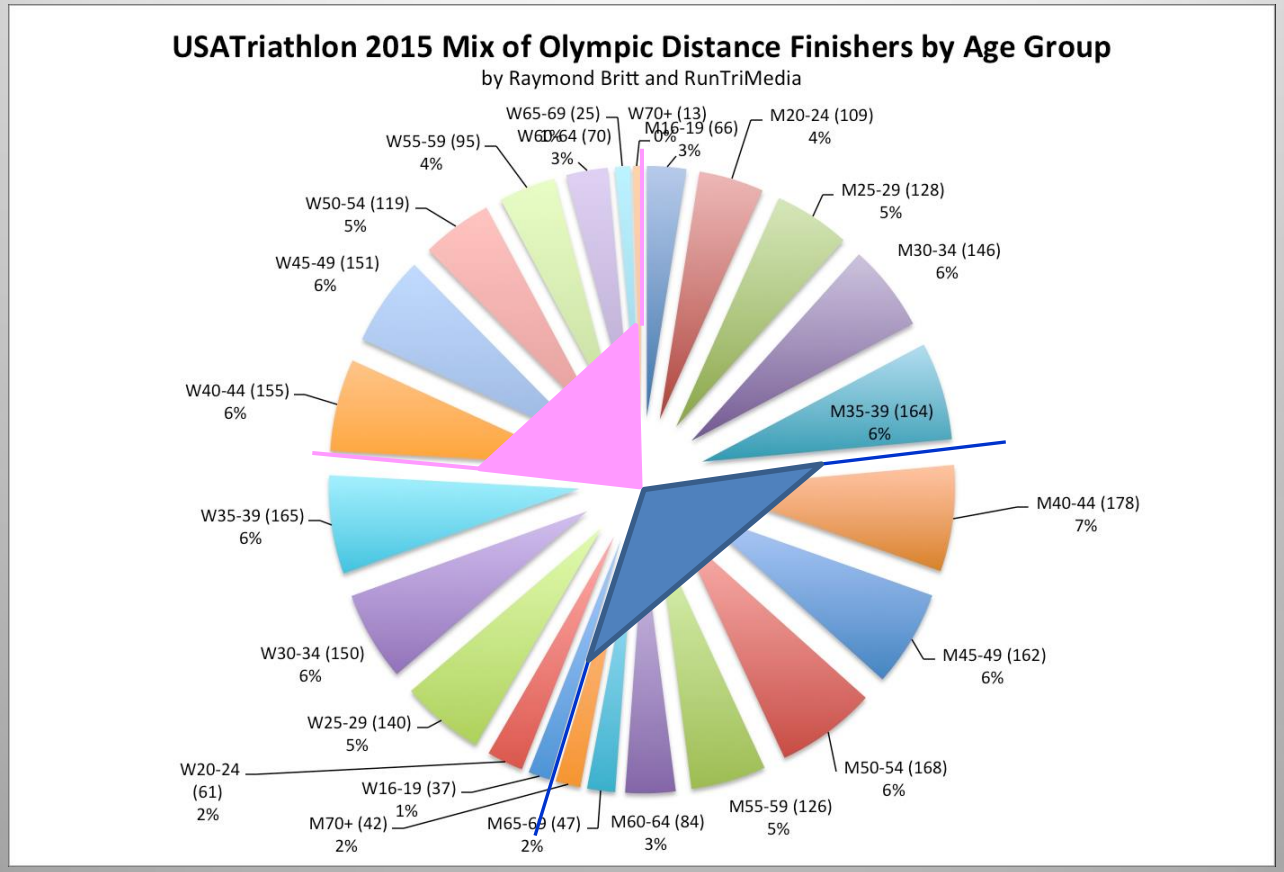
Age Distribution of Competitive Triathletes



At Age Group Nationals in 2015, well over half of women and men were Masters athletes. M40-44 was the largest age group. Women age groups from 30 to 49 were the largest and similar in size.

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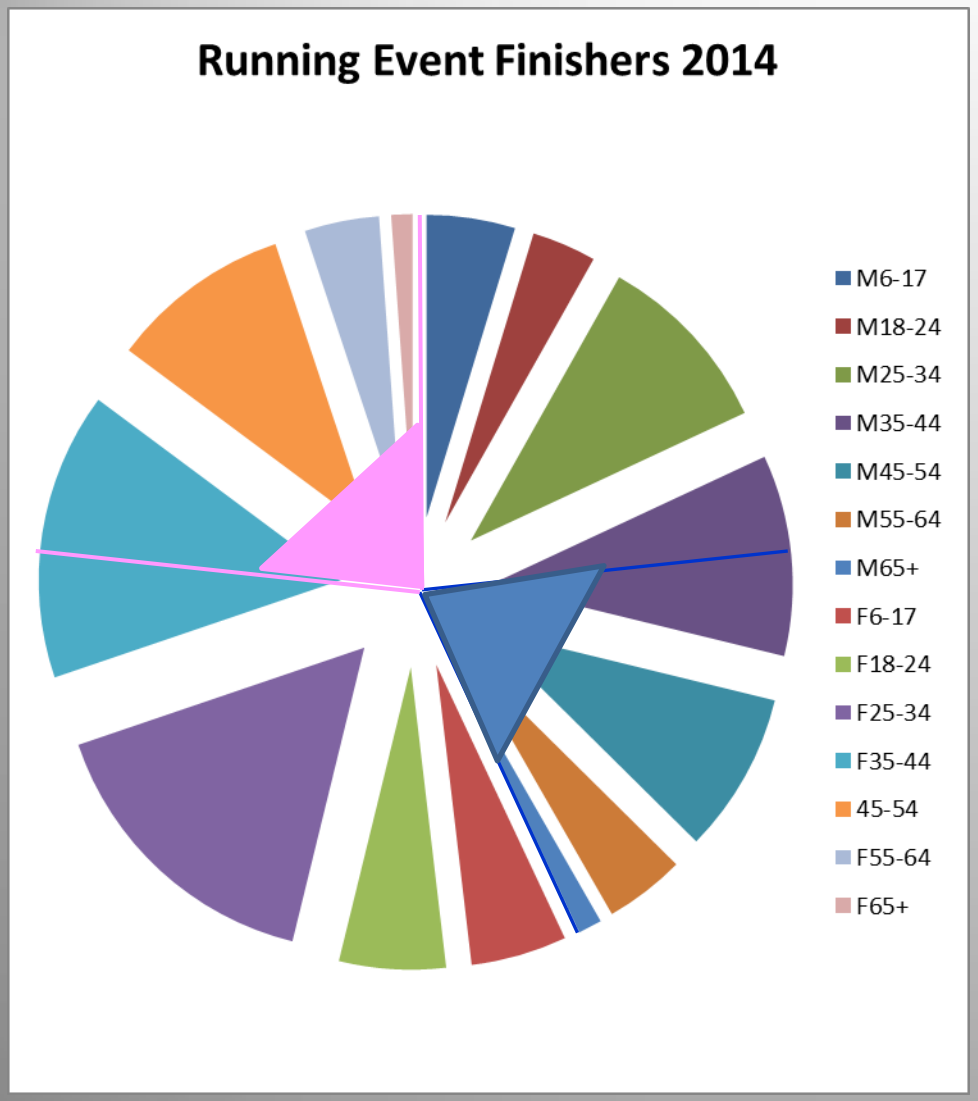
Age Distribution of Runners



Of All Runners finishing timed races in 2014 :

- 57% Women
  - ~23% > 40
  - ~34% < 40
- 43% Men
  - ~20% > 40
  - ~23% < 40

SOURCE: Running USA powered by Athlinks

Why Running & Triathlon?

- Improved Health
- Lifestyle
- Accomplishment

Motivators often change with time.

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Why do we slow down as we get older?

- Reduction in VO2 Max
  - ➢ Lower maximum heart rate and blood flow
  - ➢ 10% / decade untrained, 5% / decade trained

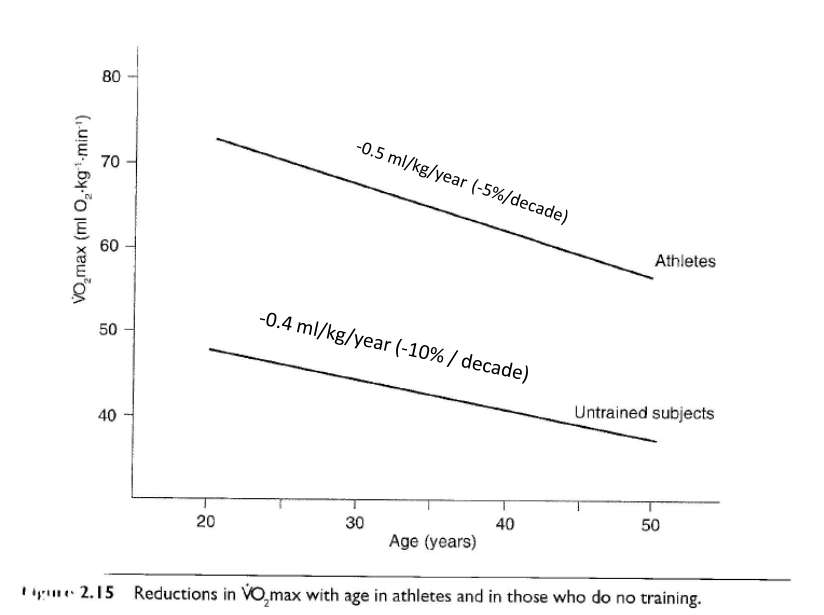

Figure 2.15 Reductions in $\dot{V}O_2$max with age in athletes and in those who do no training.

T. Noakes, Lore of Running

- Loss of Muscle Mass
  - ➢ Peaks at age 24, 10% loss by age 50, then 15% per decade to 70, then 30% loss from 70 to 80.
  - ➢ Type 1 and 2 fibers
- Increase in Body Fat %
  - ➢ Explains half the VO2 max reduction if weight is held (lean body mass).
  - ➢ Can be neutralized through training
- Neurological - Motor nerve cells in spinal column drop after age 60
  - ➢ 10% per decade
  - ➢ Decline in muscle fiber recruitability
- Muscle and Tendon Elasticity - ability to absorb landing forces running
- Rate of recovery

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What doesn't deteriorate with age?

Unaffected

- Exercise economy
- Ability to adapt to training
- Endurance - lactate levels at exhaustion actually lower.

Improves

- Experience
- Mindset and Perspective

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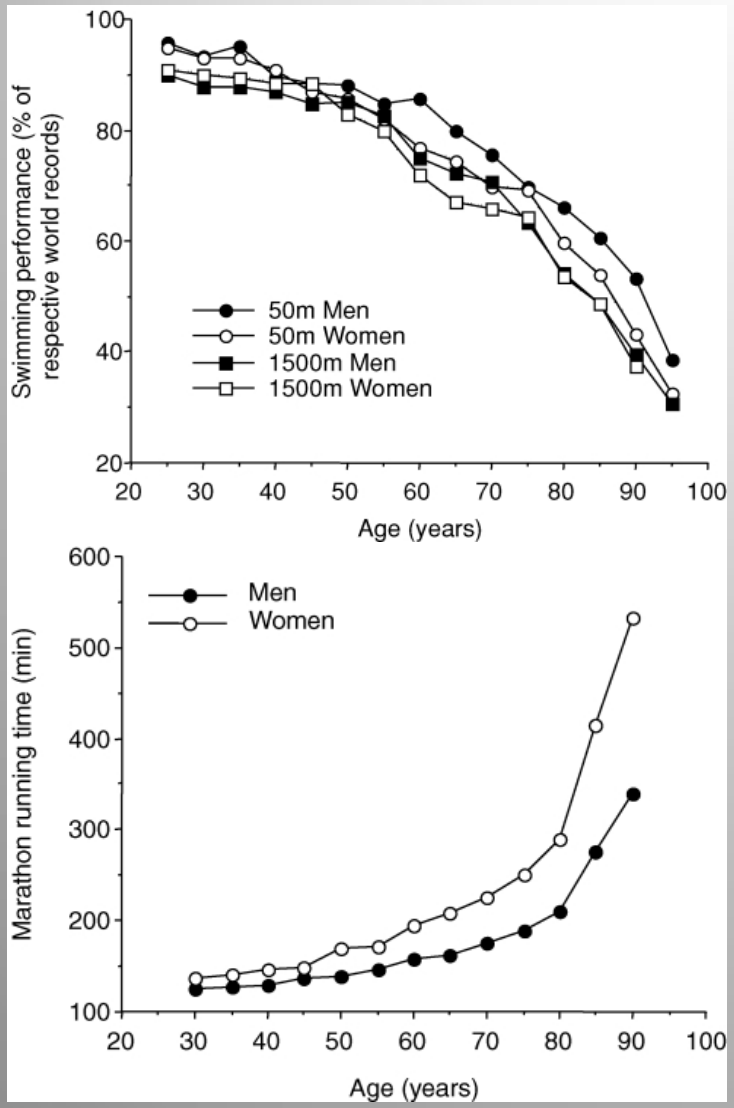
How is Performance Affected for Individual Sports?



Tanaka, Seals, Journal of Physiology, 2008

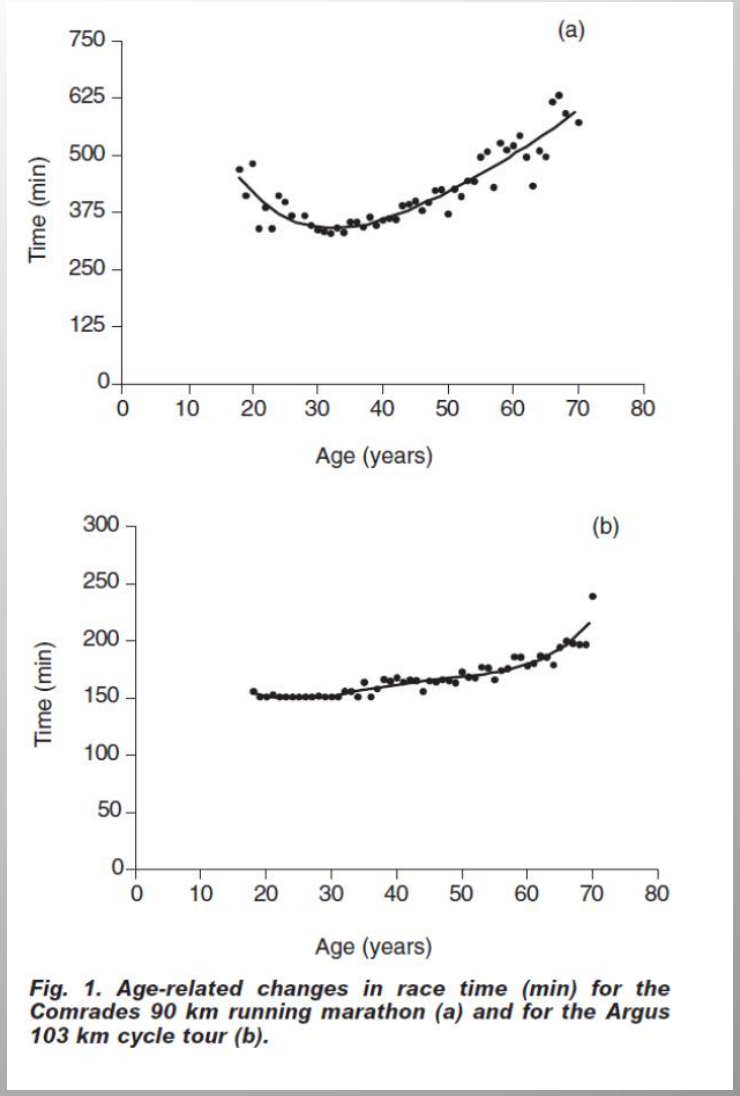


Fig. 1. Age-related changes in race time (min) for the Comrades 90 km running marathon (a) and for the Argus 103 km cycle tour (b).

Gibson, Lambert, Noakes – Journal of Sports Medicine, 2004

Swimming and running speed falls off more rapidly than cycling.
Women's running speed falls off more rapidly than men's.

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How is Performance Affected for Individual Sports?

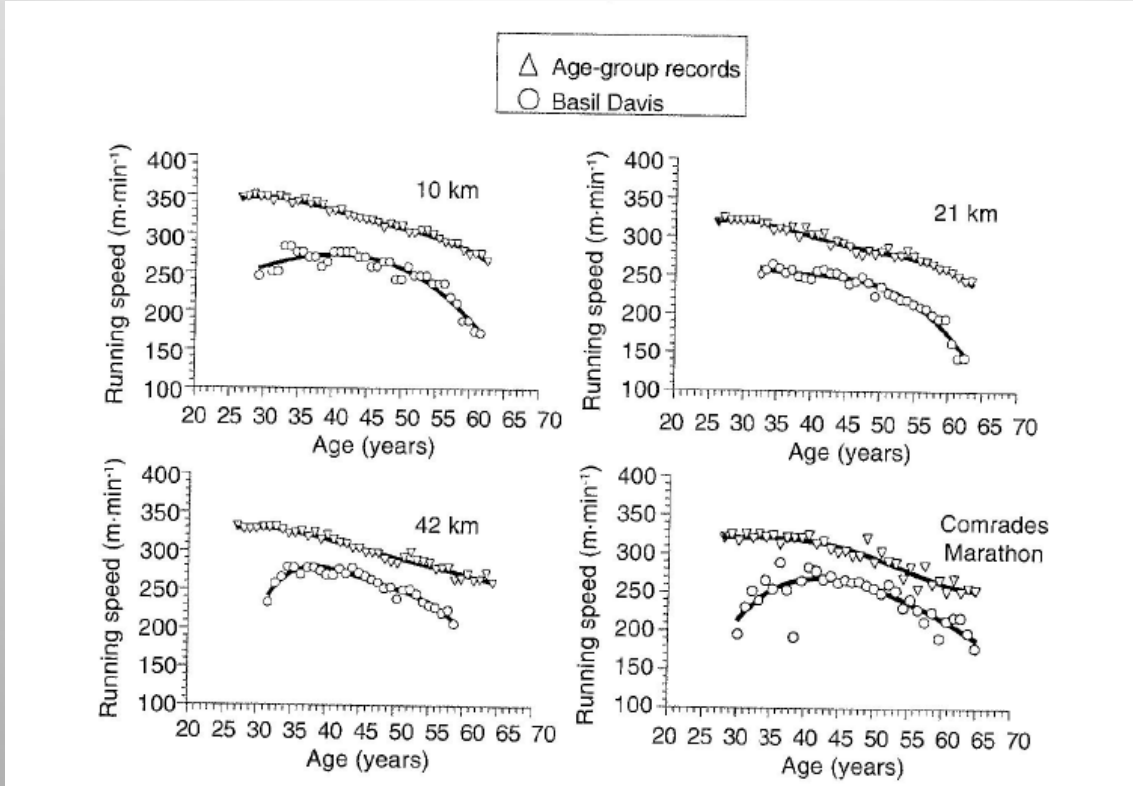

Figure 2.20 The average running speeds at 10, 21, and 42 km and at the Comrades Marathon (90 km) at different ages for Basil Davis (lower curves) compared to United States national age-group records for the shorter distances and the Comrades Marathon age-group records (upper curves).

Declines with age of very experienced or talented runners may exceed that of the average for very experienced or talented athletes, likely due to accumulated muscular damage. However, beginners can expect improvements for many years starting at any age.

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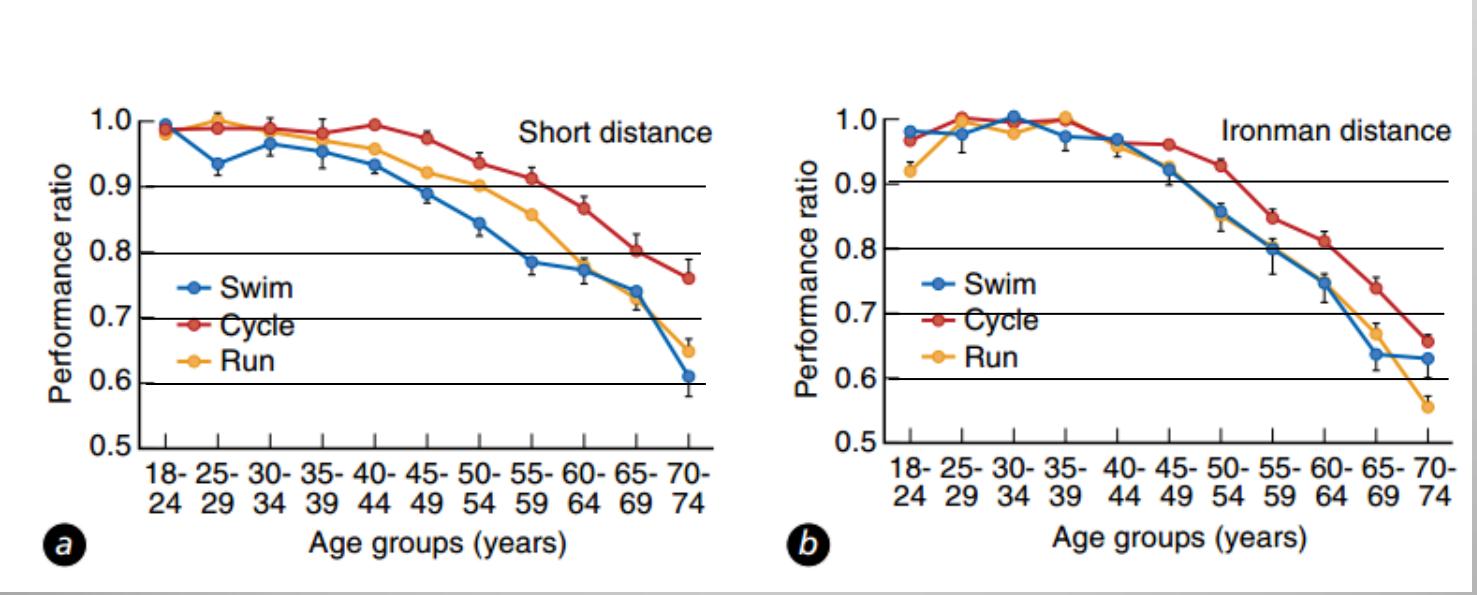
How is Triathlon Performance Affected?



R. Lepes, F. Sutana, T. Bernard et al., 2010, International Journal of Sports Medicine.

Total triathlon performance has been shown to decrease in a curvilinear manner with advancing age. However, when triathlon performance is broken down into its three disciplines, there is a **smaller age-related decline in cycling performance than in running and swimming performances**. Age-associated changes in triathlon performance are also related to the total duration of triathlon races. The **magnitude of the declines in cycling and running performances with advancing age for short triathlons are less pronounced than for longer Ironman distance races.**

Lepers, Knechtle, Stapley – Sports Medicine 2013

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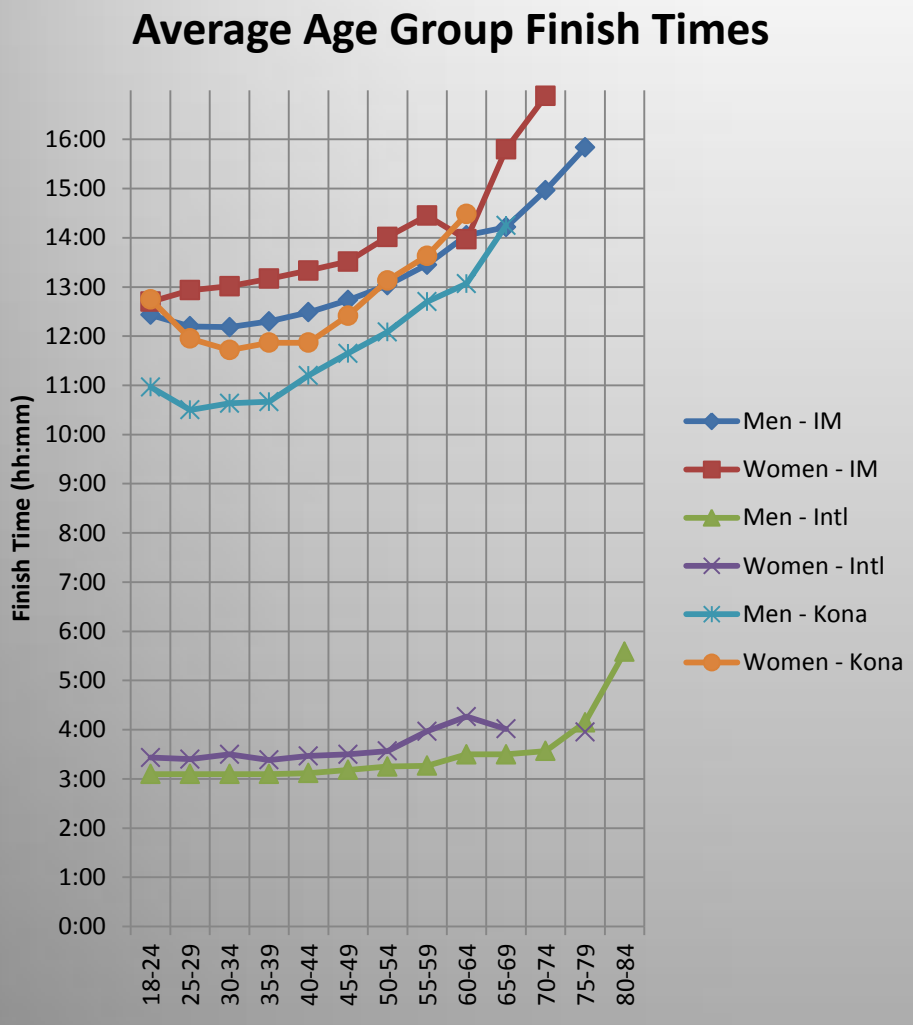
How is Triathlon Performance Affected?



Source : RunTri.Com
IM : Average of 25 IRONMAN Events
Kona : 2015 Finish Times
Intl : 2011 Chicago Triathlon

Women's times tend to fall off more rapidly with age after age 50 for both international and iron distance.

Times fall off more rapidly at the IM distance vs. International distance.

The gap between Kona times and average IM times narrows with age.

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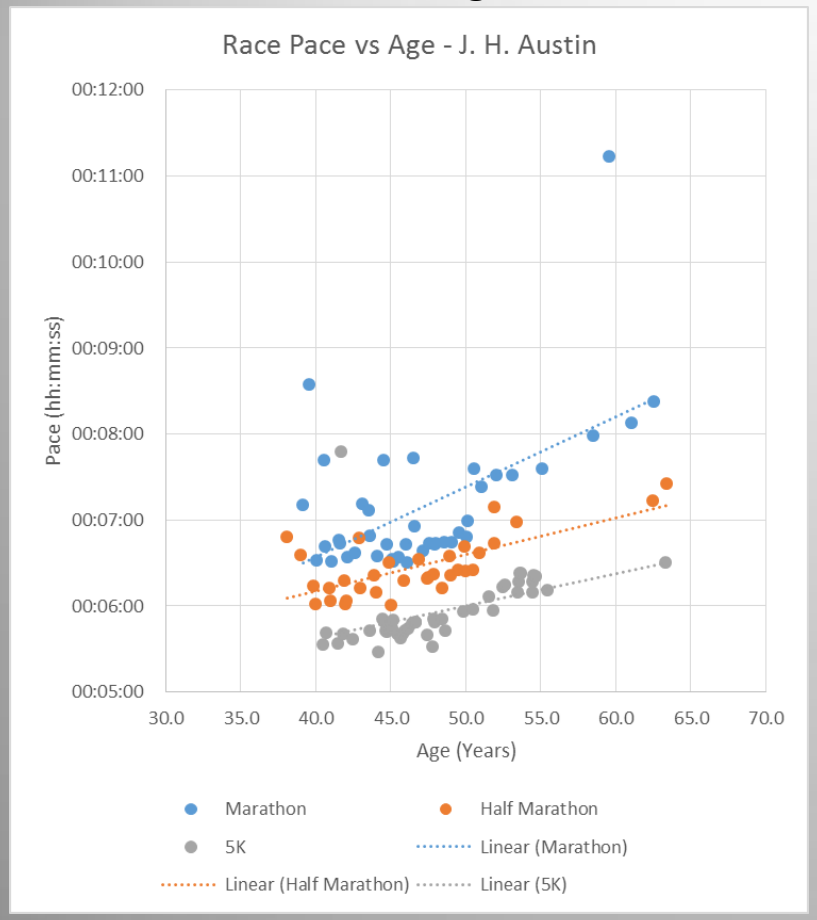
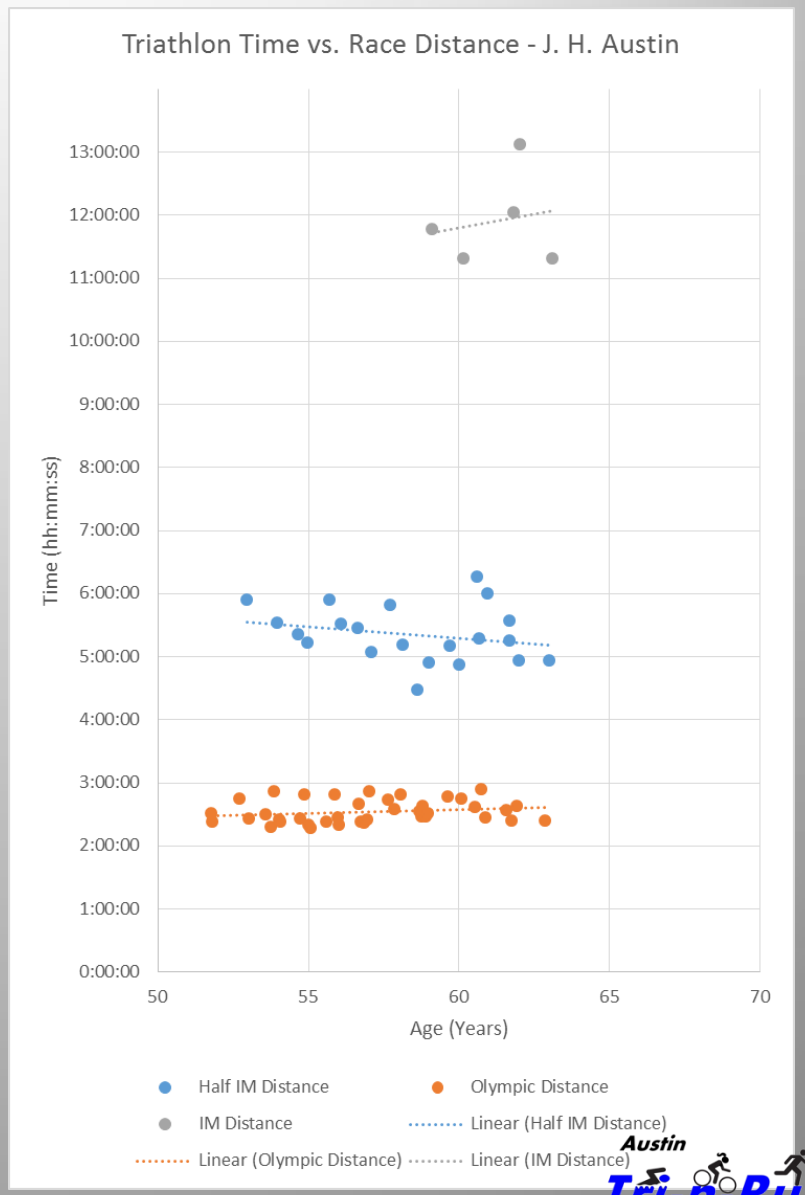
John Austin's Performance vs. Age

Running



Triathlon



- **Half and full marathon times improved slightly from age 38-45, increased slightly from 45-50, but increased stepwise at 52 with triathlon training and significant reduction in running volume.**
- **Triathlon times have been relatively stable for 10 years.**

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Older Athletes Can Produce Amazing Performances

World Best Marathon Times – Age Adjusted

Place	Name	Age	WR	WRadj
1	Barbara Dalgleisch	77	3:52:49	2:13:09
2	Tatyana Pozdniakova	50	2:31:05	2:13:23
3	Tatyana Pozdniakova	49	2:30:17	2:14:15
4	Helga Miketta	72	3:35:29	2:14:55
5	Paula Radcliffe*	29	2:15:25	2:15:50

Place	Name	Age	WR	WRadj
1	Ed Whitlock	73	2:54:48	2:00:19
2	Ed Whitlock	74	2:58:40	2:01:28
3	Clive Davies	66	2:42:49	2:01:55
4	Haile Gebrselasie	35	2:03:58	2:02:15
5	Mariko Kipchumba	38	2:06:05	2:02:17

Source : Runner's World, Alex Hutchinson, 10/30/2015

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Ed Whitlock

Whitlock holds the world marathon record for the 70-and-over age group (2:54:48) and 80-and-over age group (3:15:54).

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How can we maintain or improve performance with age? Key Elements

Physiological changes result in deterioration of peak performance as we age, but **rate of decline can be minimized through training**. Novices can look forward to years of improvement regardless of age.

- **Intensity** is the key to maintaining muscular strength and limiting performance loss. Moderate amounts of strength and interval training are sufficient.

- **Increased emphasis on recovery** is needed as we age, but the requirements remain highly individualistic.

- **Nutrition, sleep, injury prevention, and consistency** are critical at all ages but require increased attentiveness by masters triathletes.

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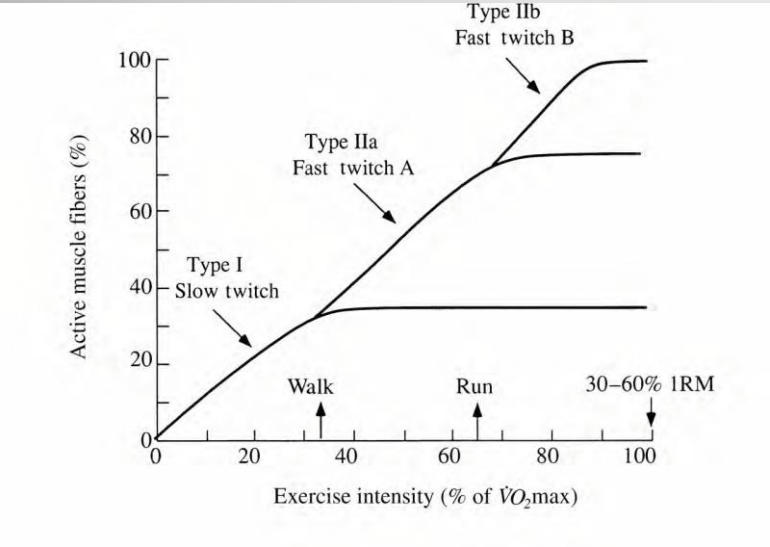
Maintaining Muscular Strength

Muscle fibers are recruited incrementally. If not used, size and recruitability of Type 2 fibers will deteriorate. High intensity exercise will work to train and maintain Fast Twitch fibers.



E. F. Coyle, Am J Clin Nutr - 2000

The good news is that strength training can offset all of these musculoskeletal changes

Characteristic	Aging	Resistance Training
Muscular strength	↓	↑
Power	↓	↑
Muscular endurance	↓	↑
Muscle mass	↓	↑
Muscle fiber size	↓	↑
Muscular metabolic capacity	↓	↑
Resting metabolic rate	↓	↑
Body fat	↑	↓
Bone mineral density	↓	↑
Physical function	↓	↑
Anabolic hormones	↓	↑

Both aerobic & strength exercise are beneficial for older adults but only strength training increases muscular strength, muscle mass & bone density

Source: *Essentials of Strength and Conditioning*, NSCA, 155

16

Dave Scott, "Racing-Against-Age", 2012

Solution :

- Include an element of "speed" work in training year round.
- Do strength training year round – entire kinetic chain and core.

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Maintaining Muscular Strength

Strength Training

- Periodized – stability, strength, power
- Progressive – simple to complex, single to multi-plane
- Involve full kinetic chain. Core is critical.
- Separate strength & endurance training. Strength first.

Intensity – Interval Training

- Zone 4 and 5 sessions appropriate to Training Phase
  - Short speed intervals
  - Short intervals incorporated into long endurance sessions
  - Strength workouts (hills, fartlek)
  - Longer threshold sessions.
  - Race specific interval sessions.
- Use sparingly (one set per discipline per week)
- Recover frequently
- Maintain leg speed : high cadence bike work

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Recovery

- Adaptation occurs during recovery – at all ages
- Recovery takes longer as we age but is still highly individualistic
- Additional recovery needs to be built into training plans – examples :
  - Microcycle – 2 easier days after a hard day
  - Mesocycle
    - Recovery week after 2 build weeks (vs. 3)
    - More time between races
  - Macrocycle – longer transition phases
- Sleep becomes increasingly important.
- Nutrition becomes increasingly important.

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Nutrition

- Research suggests nutritional requirements for athletes do not change significantly with age.
- The effects of “poor” nutrition may be more apparent in older athletes – “ in our 60’s, we can’t get away with the poor habits we had in our 20’s”.
- Fueling and post-workout nutrition – older athletes are more susceptible to muscle damage; protein is important to recovery
- Important considerations :
  - Metabolism decreases – less calories required to maintain weight
  - Protein needs increase slightly with age.
  - Micronutrients
    - Calcium
    - Vitamins – D, B12, E
    - Anti-oxidants
  - Hydration – sensitivity of thirst mechanism decreases, decrease in renal function

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Injury Prevention

- Older athletes are more susceptible to over-use injuries, take longer to recover, and longer again to rebuild after an injury.
- Critical factors :
  - Adequate recovery
  - Stability - hip, shoulder, core
  - Flexibility – range of motion
  - Running technique
  - Early response to issues

Consistency

- Consistency is key to enjoying the benefits of Masters Triathlon (Health / Lifestyle / Accomplishment)
- Consistency Detractors
  - Illness or Injury
  - Changes in priority – voluntary or involuntary
  - Lack of motivation
- Understanding and continual reassessment of your goals and whether those goals are being met. If disconnected, change things up.

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Using Experience to Advantage

- Training
  - Maintain a detailed log, learn what works and what doesn't
  - Avoid overtraining mistakes, get adequate recovery
  - Make appropriate adjustments to your plan
- Race preparation
  - Pack and travel smart
  - Know the pre-race and race details
  - Practice tried and true pre-race rituals
- Race execution
  - Focus on the process not the outcome
  - Use your hard earned problem solving skills
  - Mental fortitude – you've been there before
- Maintain a healthy perspective

Maybe I can't get faster, but I can sure get smarter.

If improvement comes from avoiding past mistakes, then I have lots of room for improvement.

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Mastering Masters Triathlon & Running

- Triathlon and Running offer health benefits, an enjoyable lifestyle, and opportunities for accomplishment at any age.
- Masters athletes make up around half of participants in most races.
- Reductions in VO2 Max and muscle mass as we age result in inevitable loss of speed, but the rate of loss is reduced through training, and novices can expect actual improvements for many years.
- Year round strength and interval training is key to maintaining muscle mass and strength after age 50.
- Recovery, nutrition, injury prevention, and consistency are important components of training plans for all ages, but become increasing critical for older triathletes.

You're never too old to start or improve.

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