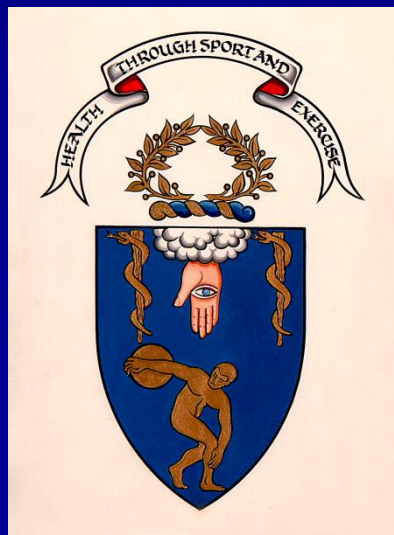
What is the future for Sport and Exercise Medicine around the world?

Australasian College Sport & Exercise Physicians

Sun Feb 12th 2017

Prof Mark E Batt



Prof Mark E Batt

Consultant Sport & Exercise Medicine
Director Arthritis Research UK Centre Sport, Exercise & OA
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President Faculty SEM(UK): 2010-2012
Past-Fellow: NHS Institute for Innovation & Improvement
Past-Chair: SEM Specialist Advisory Committee

Declarations:

- UK bias, 25yrs+ SEM
- This is not evidence-based
- Personal opinion

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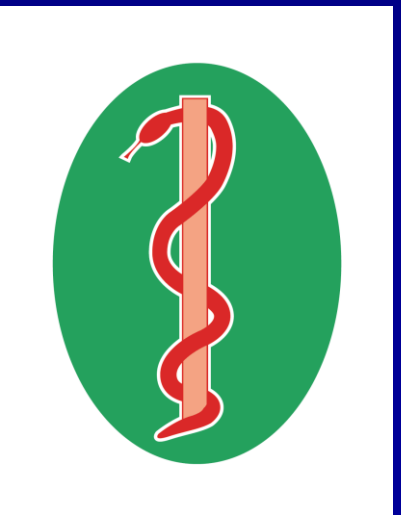
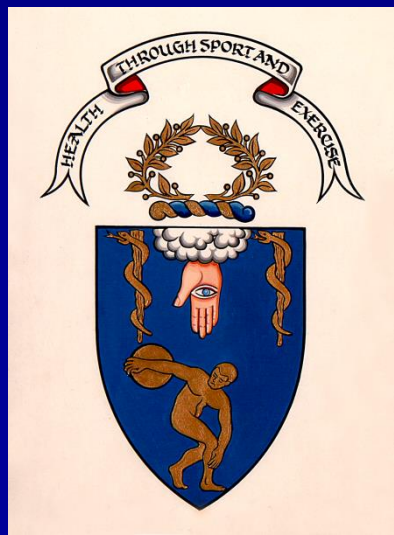
What is the future for Sport and Exercise Medicine around the world?

Looking back to understand the way ahead….





Sports Medicine as a Certified Specialty

Rendezvous 2004

10.30-Noon Thursday
April 15th 2004

Chair Prof Mark Batt

Program:

5 mins	**Introduction**	Mark Batt
10 mins	**United Kingdom**	Mark Batt
10 mins	**Scandinavia**	Roald Bahr
10 mins	**Australasia**	Paul McCrory
10 mins	**Canada**	Julia Alleyne
10 mins	**USA – Medical doctors**	Bert Fields
10 mins	**USA – Doctors of Osteopathy**	Gunnar Brolinson
10 mins	**USA – Physiatry**	William Micheo
15 mins	**Panel Discussion/Questions**	**All**

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Some key questions:

1.What is the current status of Sports Medicine as a specialty in your country? Is it recognized as a stand-alone specialty – is that important?

1.What undergraduate teaching is undertaken in Sports Medicine?

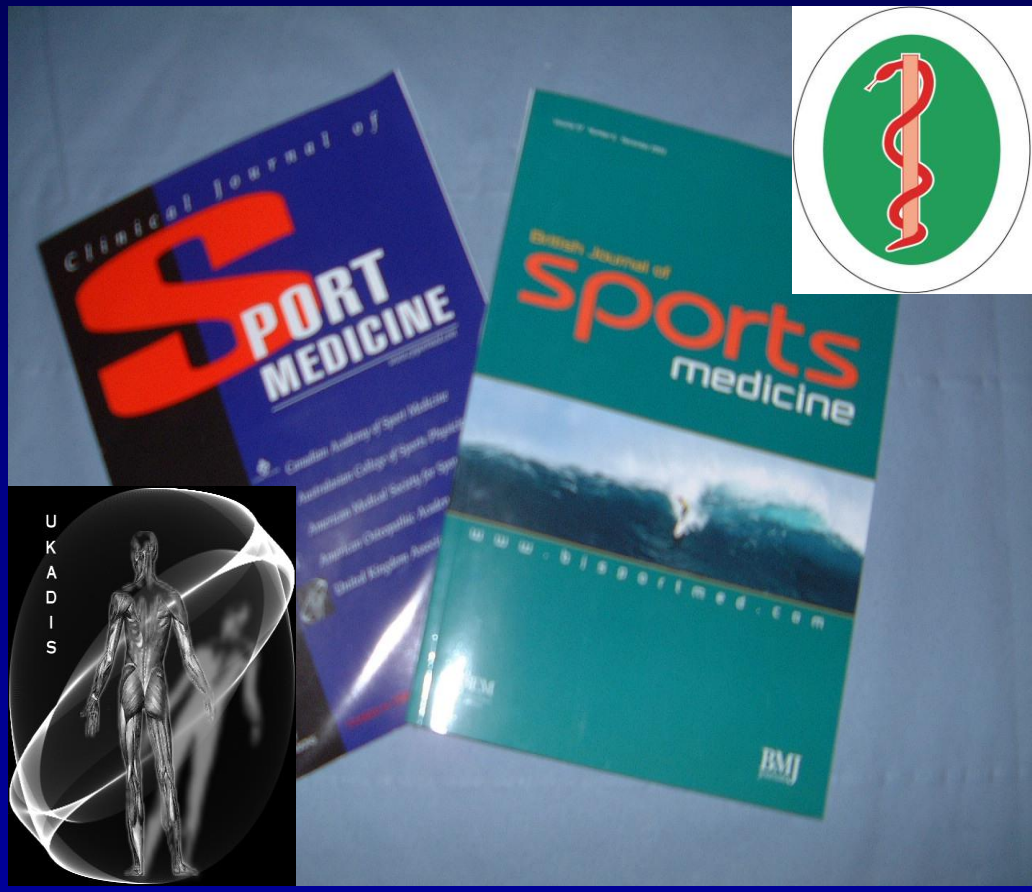
1.What is the nature and structure of postgraduate teaching in Sports Medicine?

1.What are regarded as the key issues and constraints in curriculum design?

1.Employment opportunities in Sports Medicine?

What is the current status of Sports Medicine as a speciality the UK?

- British Association of Sport and Exercise Medicine: BASEM
  - 1953
  - Multidisciplinary
- United Kingdom Association of Doctors in Sport: UKADIS
  - 2001
  - Doctors



What is the current status of Sports Medicine as a specialty in your country?

Is it recognized as a stand alone speciality?

- Speciality status applied for Jan 2004 – DoH
- Recognition those wholly engaged in SEM
- SEM – Sport and Exercise Medicine

- Doctors with a sub-speciality interest in SEM
- Diploma or MSc in SEM

What undergraduate teaching is undertaken in Sports Medicine?

2004

- Little
- Variable
- Electives

2017

- Some
- Variable: improving
- Exercise medicine
- Strong Undergraduate SEM Societies

Undergraduates are our future.....

What employment opportunities exist in Sports Medicine (2004)?

NHS SEM Consultants in Trust Hospitals	3
Locum Consultant pending formal contract	1
PCT appointed SEM/Musculoskeletal specialists	5-10
Sports Physicians working with elite athletes	20+
Sports Physicians working ft in pro sport	20
Sports Physicians working pt in sport	60
NHS consultants with an interest in SEM	20
GPs with an interest in SEM	350

What employment opportunities exist in Sports Medicine in 2016?

FSEM: 569: 234 Fellow, 265 Members

Specialist register in SEM: 101 (5 abroad, 32 dual accreditation)

NHS Consultants: Trust Hospitals or MoD	56
28/56 do some research	
30/56 also have NGB/Sport role	
NHS consultants with an interest in SEM	20+
GPs with an interest in SEM	350+
SEM HST posts (NHS): 12x4yrs	48

European Union

- FIMS/European Federation of Sport & Exercise Medicine: it is imperative that Sports Medicine in recognised as a speciality or sub specialty in every country in Europe (Copenhagen 22 Nov 1997)
- Advisory Committee of Medical Training of EU
- Sports Medicine as specialty: *Finland**, *The Netherlands**, *Italy**, *Spain and Portugal** - * 4 yr training program
- 6 countries with harmonised training: apply to ACMT
- >9 Imperative

CONCLUSION: Action plan 2009-2012

- We need a National Health Manager in each country of the 27 EU countries .
- In the beginning we count on the financial support of the Associations
- He has to be a Physician with good relations to the Government or/and the Medical Chamber and of course the SM

Different models of Sports Medicine

- The Netherlands: Preventative Medicine
- Croatia: Occupational medicine
- USA/Canada: Sub-specialty status
- The UK, Australasia: Sport & Exercise Medicine

The future

- UK speciality status for SEM
- EU speciality status for SEM
- International academic collaboration: on-line education – BASEM/ACSP
- International core curriculum

The future

- UK speciality status for SEM ✔
- EU speciality status for SEM ✖
- International academic collaboration: on-line education – BASEM/ACSP ✖
- International core curriculum ✔

Sports Medicine as a Certified Specialty

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Assoc Prof Paul McCrory
President 2002-2004

RENDEZ VOUS 2004

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CASM ACMS

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What is the current status of Sports Medicine as a specialty in Australasia?

At present,

ACSP has made application to the AMC & is awaiting commencement of the accreditation process. (2005)

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The rest is history!

- ACSP 1985: 19 passionate Drs
- 1991: first fellowship
- 1992: first sports medicine registrar
- 1993: ACSP joined by New Zealand
- 1998: specialty recognition NZ
- 2009: specialty recognition
- 2016: 159 fellows globally

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Sports Medicine Certification in the United States: American Medical Society Sports Medicine

AMSSM

P. G. BROLINSON, D.O.

K. B. Fields, M.D.

History Of Sports Medicine

- 1954: ACSM founded
- 1977: AOASM founded
- 1987: First ACSM Clinical Conference
- 1989: Certificate of Competence in Sports Medicine, AOASM
- 1989: Team Physician course, ACSM

History Of Sports Medicine

- 1991: AMSSM founded
- 1992: 1st AMSSM Conference San Diego (150)
- 1993: Certificate of Added Qualification in Sports Medicine, ABMS
- 1994: AOA approves Board Certification of Added Qualifications in Sports Medicine
- 2015: 23rd AMSSM Conference Miami (1500)

Current Status of Primary Care Sports Medicine Fellowships: 2004

- In the USA ~ 1000 primary care physicians with a CAQ
- Approximately 60 accredited fellowship sites
- Approximately 110 fellows graduate yearly
- Most programs train both allopathic and osteopathic physicians

Current Status of Primary Care Sports Medicine Fellowships: 2016

- In the US
  - ~ 1951 primary care physicians with a CAQ
  - ~ 500 physicians (Internal, PMR, Paeds, EM) with a CAQ
- Approximately 183 accredited fellowship sites
- Approximately 280 fellows graduate yearly
- Numbers doubled in 12yrs

Sports Medicine in Canada

Dr. Julia Alleyne, CASM

President, 2003-2004

Summary: 2004-2017

Multi-expert sport medicine physician group: CASEM

Different Practice Profiles

Practice Patterns are strong in clinical areas

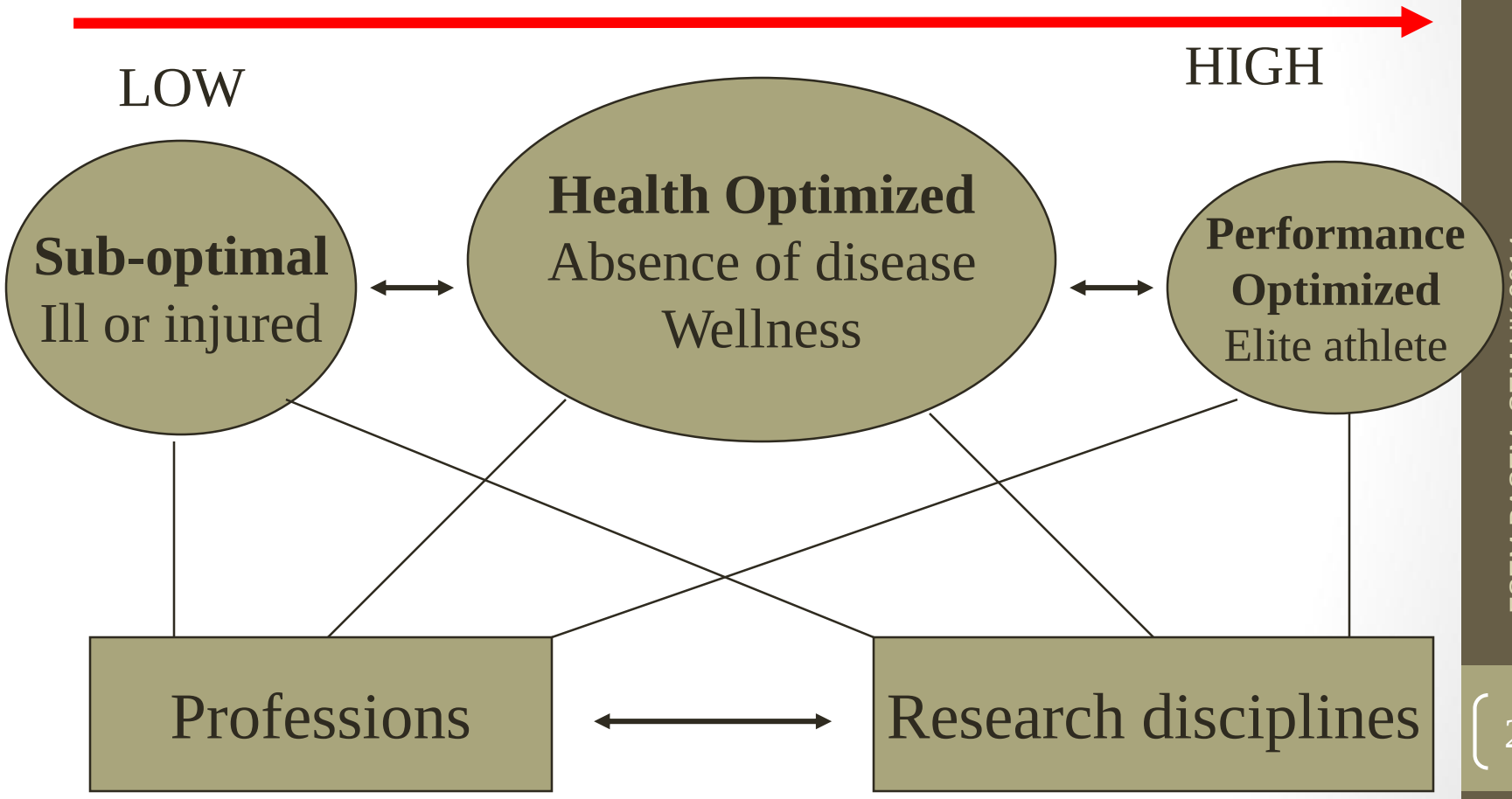
Educational commitment: Fellowships (n=10), Diploma

Evolution of a profession

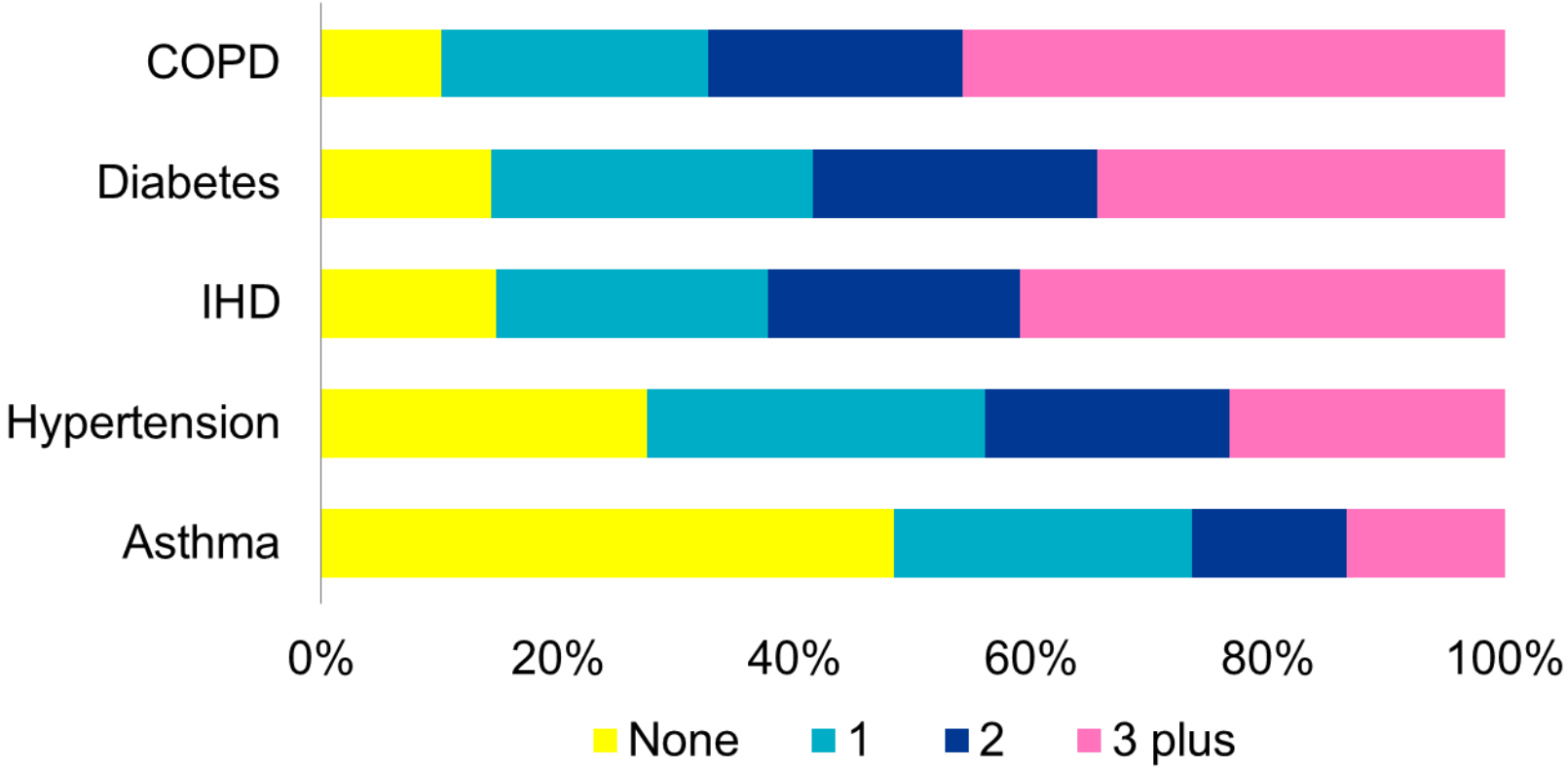
Can we be the Masters of our Destiny ?

What is Sport & Exercise Medicine?

Human Performance Continuum



Exercise Medicine: Multiple LTCs

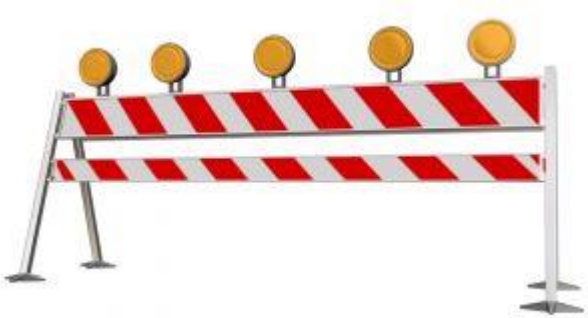


CHE
Centre For Health Economics

South Somerset Symphony project

System barriers to progress?

Hospital specialists



General practitioners

Delivery system design: who wants what?

- The patient wants a specialist
- The system needs generalists

Professional leadership:
Whole community responsibility?

Specialists in hospital

Specialists out of hospital

Public Health England

The spread of Healthy Living Pharmacies

Over
3500
pharmacy staff qualified as health champions at January 2016

Over
2100
pharmacies accredited and en route to being accredited Healthy Living Pharmacies at January 2016

Can we deliver Exercise Medicine?

- Primary care +/- Secondary care
- Health care system dependent?
- Prevention & Rx
- Is it commissionable product or a philosophy? U-Turn (SA)
- ‘Put your hand up’: Kieran Fallon – give a talk

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Discussion: Our future

- Speciality or sub-specialty: does it matter?
- A curriculum for each?
- A universal curriculum?
- Sports Medicine or Sport & Exercise Medicine
- How can we help each other?
- Research

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The evidence base for orthopaedics and sports medicine: scandalously poor in parts

L Stefan Lohmander,[1] Ewa M Roos[2]

Medicine rests on an uneven evidence base. Some interventions are supported by large multicentre randomised controlled trials that have a low risk of bias and are powered for hard endpoints—a high level of evidence. Others depend on retrospective observational data that provide a lower level of evidence. Yet others were theorised and consid- ered biologically or mechanistically plausible and are heirlooms of "eminence based medicine."

Some interventions are just plain wrong and have real costs and harms, without countervailing benefits. Medical reversals may occur when well done clinical trials, systematic reviews, and meta-analyses of trials find current practice to be no better than a lesser treatment or placebo. Classic examples of reversals are anti-arrhythmic drugs for patients with recent myocardial infarction and hormone replacement therapy for menopausal women.[1]

The evidence base for orthopaedics compares unfavourably with other fields of medicine. Only 20% of procedures are estimated to be supported by at least one low-risk-of-bias randomised controlled trial showing that surgery is superior to a non-operative alternative.[2]

A similar review of the evidence base for sports medicine is not available. However, a recent inventory of randomised trials published during 2013 in the *American Journal of Sports Medicine* and the *British Journal of Sports Medicine* points to only a modest level of evidence in support of sports medicine practice. Only about a third of more than 40 original randomised trials provided an approved trial registry identifier and only 25 of the 40 reports presented a clearly defined primary endpoint. In addition, all articles had problems with multiple comparisons in the statistical analysis and no clear strategy for dealing with them in the data analysis.[3] As a result, the empirical support provided by these trials is overestimated and a sizeable proportion of interventions used in sports medicine may not be based on high level evidence.

The need for evidence in sports medicine practice will be discussed at a symposium at the Danish Sports Medicine meeting later this month (http:// sportskongres.dk). In both orthopaedic surgery and sports medicine, it is unclear whether some surgical interventions are better than nonsurgical alternatives or better than placebo in the form of sham surgery. Recent examples where surgical interventions were shown to confer no benefit over non-operative alternatives or sham surgery include arthroscopic surgery in middle aged and older people with persistent knee pain,[4] surgical reconstruction of acute rupture of the anterior cruciate ligament in young active adults,[5] and vertebroplasty to treat pain associated with vertebral fractures.[6]

A recent systematic review of the evaluation of surgery found that half of the studies that used placebo controls provided evidence against the continued use of the investigated surgical procedures.[7] Trials without sham control may show benefit for the surgical procedure when compared with no treatment or ineffective non-operative treatment, or when the outcome is compared with pre-treatment status. But it is difficult to justify invasive surgery with associated risks simply to obtain an effect similar to the placebo effect of sham surgery.

Other interventions where innovation and dissemination have moved rapidly and far ahead of evaluation and evidence are arthroscopic surgery for hip problems and femoro-acetabular impingement, and injections of platelet enriched plasma preparations or autologous stem cells for musculoskeletal soft tissue injuries.[8 9] Past experience, such as the use of bone morphogenetic protein-2 in spinal surgery and metal-on-metal implants for hip osteoarthritis, shows the risks of serious patient harms when moving too fast and too far beyond evidence.[10 11] It also illustrates what has been termed Buxton's law: "it is always too early [for rigorous evaluation], until, unfortunately, it's suddenly too late."[12]

To reduce the risk of future failures, we must encourage the stepwise introduction of new surgi- cal procedures and devices.[13] Best practice must routinely be based on evidence, shared decision making, and monitoring and analysis of out- comes. And ineffective practices must be eliminated, painful as it may be for their supporters.

Clinical impressions can be deceiving. Where high level evidence speaks against abundant clinical experience and ingrained and unquestioned routine, cognitive dissonance results.[6] Defenders of questioned treatments focus on potential scientific flaws in the published trials to invalidate trial results and thereby to decrease their level of cognitive dissonance, while ignoring the inherent biases of clinical experience and the phenomenon of the physician as a placebo reactor. It was, for example, suggested that participants in sham controlled surgical trials "may not be of entirely sound mind" and research performed on such people "not generalisable to mentally healthy patients."[14]

NEED TO CHALLENGE CONFIRMATION BIAS

Confirmation bias reigns and we ignore, or do not want to be exposed to, information or opinions that challenge what we already believe, while wanting to hear information and beliefs that confirm what we already believe. This human trait contributes to overconfidence in personal beliefs and maintains and strengthens beliefs in the face of contrary evidence. The effects are stronger for emotionally charged issues and deeply entrenched views. As a result, proponents of questioned interventions fight hard for their interventions and specialties and often delay change, when the appropriate and ethical action would be to abandon ship.[1 15]

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1 Prasad V, Cifu A, Ioannidis JPA. Reversals of established medical practices. Evidence to abandon ship. JAMA 2012;307:37–8.

Challenges

- Research quality/relevance
- Outcomes: PROMs
- Organisations – aligned goals?
  - IOC:
    - Drugs
    - Surveillance & prevention
    - ? Consequence: long-term athlete health

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Patient Reported Outcome Measures (PROMs) have arrived in sports and exercise medicine: Why do they matter?

Jennifer C Davis,[1] Stirling Bryan[2]

Clinicians' first exposure to clinical testing are clinician-applied standard tests. Physiotherapists assess joint range of motion, physicians measure blood pressure or take blood for laboratory testing. These provide essential information and do not require the patient to contribute their perspective.

In addition to clinical features that lend themselves to be measured in such a manner, many factors that characterise a patient's health status cannot be observed, measured with a device, or analysed with even the most sophisticated imaging methods. How a patient feels and performs remains largely impenetrable to devices. Instruments that reflect the patient's perspective about their health status have the collective title of Patient Reported Outcome Measures (PROMs).[1] The appetite for routine use of PROMs reflects the idea that a properly queried patient represents a critical complement of information about health.

PROMs commonly used in sports medicine include the Western Ontario Shoulder Instability Index (WOSI)[2] for shoulder instability, the Knee injury and Osteoarthritis Outcome Score (KOOS)[3] for knee complaints, and the Victorian Institute of Sport Assessment (VISA) scales for tendinopathies.[4] In this first of two educational pieces related to PROMs we provide an overview for the reader who has not considered PROMs formally before. We recommend the reader consult Davidson and Keatings's[5] review for complementary material.

There are three primary contexts in which PROMs are used: (1) clinical practice and (2) clinical research and (3) healthcare policy. Conceptually PROMs can be viewed either as a 'tool for evaluation' or as a 'mechanism for improvement'. The most widespread use of PROMs has been for measurement to inform evaluation (ie, clinical research).

Without PROMs, health service accounting (is a service, such as an operation, useful?) focuses on production of healthcare (ie, the number of surgeries performed, wait times). This method does not capture the patient experience—ideally, the patient benefit. If it were routine practice for sports medicine patients to have their outcomes measured (ie, PROMs such as the KOOS after anterior cruciate ligament (ACL) reconstruction), it would provide a measure of what 'health' the operation or clinical treatment had provided. We see three distinct categories where patients, clinicians, health sector managers, policymakers, and researchers would benefit from having summary PROMs information of patients' perceived health status over time.

1. Clinical practice settings: individual clinics and clinics in a franchise
2. Practically, the following resources must exist for successful PROMs implementation. The outcome scores and results from the PROMs completed by each patient would need to be available in real time. Clinicians who are reviewing these data will need to be informed about interpretation relating to patient outcomes and subsequent treatment decisions (not unlike seeing blood test results and knowing norms). Implementing PROMs in clinical practice settings will enable quality improvement initiatives detailed below:
   A. Patients empowered to interpret a relevant PROM (eg, KOOS after ACL surgery) could readily monitor their health profile over time and compare themselves with their peers. By better understanding their experience, these patients may be more actively engaged in striving for health outcomes like full rehabilitation.
   B. PROMs can help clinicians quickly identify which of their patients experience improved or deteriorated health outcomes over time. This will highlight any consistent patient complaints, which would suggest refinements to care pathways. Ideally a PROM could contribute to a return to play assessment.
3. Clinical research:
   A. Two Cochrane systematic reviews use PROMs to evaluate the effectiveness of two surgical interventions in a sports and exercise medicine setting.[6 7] One RCT used a condition specific and a generic PROM (ie, the KOOS and SF-36) to track patient outcomes over a two year time horizon.[8] Inclusion of PROMs in clinical trials will enable important clinical questions to be answered. One example could be deciding whether structured rehabilitation plus early ACL reconstruction with structured rehabilitation with the option of later ACL reconstruction if needed.[3]
4. Healthcare policy:
   A. PROMs allow health sector managers to identify 'outlier' practitioners or clinics—those that are associated with superior and inferior health outcomes. This provides opportunities for efficiency gains through learning from the high-performing centres.
   B. Policymakers could make use of these data to assess overall health sector productivity. If sports medicine/rehabilitation processes are demonstrating improvements in PROMs, this could be used as part

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Opportunities abound

- A universal curriculum
- MOC: Massive online course (MOOC: Open)
- Sport & Exercise Medicine: population health
- MSK Health: 1°, 2°, 3° prevention
- Accessible advice: Protecting the health of the @thlete: e-health & Sideline Guidelines - Cleveland Clinic Innovations
- Research

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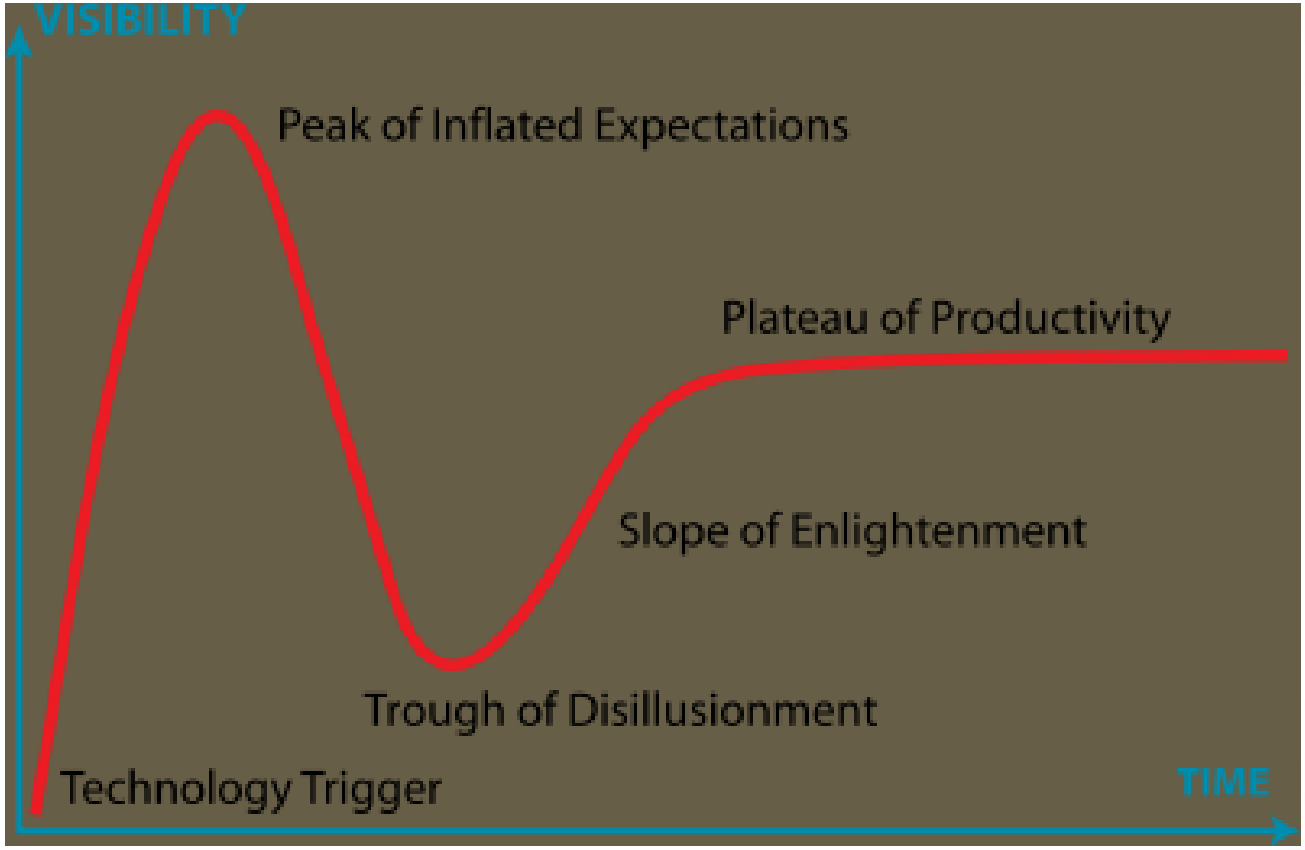
FSEM-SEM evolution



Why are we here?

- £, $
- Love of medicine, sport, exercise
- Professional conduct: exercise for health – all of our patients are ‘athletes’ to a greater or lesser extent
- Collegiality

Good people: friends

Integrity, respect, compassion, collaboration, professionalism, excellence, foresight, team

Looking to the future

"Someone's sitting in the shade today, because someone planted a tree a long time ago". Warren Buffet