

Handwashing, degenerative discs, and other heresies

'History warns us, however, that it is the customary fate of new truths to begin as heresies'.

-TH Huxely, 1880

In 1847, Ignaz Semmelweis wrote of the importance of handwashing in medical practice. While this basic act is now the front line of defense against the spread of disease, at the time his work was soundly rejected by the medical community. History is littered with similar stories of important scientific findings, forgotten due to the passage of time or pushed aside by dogma and flawed reasoning. Sometimes, long-held beliefs must be challenged and disregarded. The true challenge is knowing which theories to keep and which to reject.

A recent white paper titled 'American Academy of Orthopaedic Manual Physical Therapists (AAOMPT) Opposes The Use Of Degenerative Disc Disease (DDD)' suggests that we reject this scientifically accepted term from our practice [1]. The authors predicate their argument on several key facts: DDD is a naturally occurring phenomenon that is commonly observed in asymptomatic individuals, use of the term 'disease' may be harmful, and '*DDD, out of context with clinical presentation, can result in unnecessary intervention or adverse outcomes for patients*' [1]. All these statements are inherently true. Accordingly, the AAOMPT white paper places strong emphasis on the psychosocial aspects of care. Avoidance of the term 'disease', based on our growing understanding of the influence of our word selection on our patients' perception and condition is an overdue change, as the authors eloquently remind us 'words matter'. Further discussion explores the role of imaging findings as part of an overly medicalized healthcare system for patients with low back pain. For this, the authors are to be commended.

There is little argument that degenerative changes are common, often asymptomatic, and frequently taken out of their clinical context. This does not mean that all aspects of discogenic degeneration are irrelevant in the context of manual therapy. Therefore, we revisit this forgotten truth as a well-researched pathology with known physiologic and biomechanical sequelae: **while common, DDD is far from normal.**

To suggest considering DDD as a 'normal' finding does a disservice to the patients who entrust us with their care, and sets a dangerous precedent. We consider a comprehensive understanding of the

consequences of degenerative structural changes to be critical to OMPT practice.

Winston Churchill once stated: 'The farther backward you can look, the farther forward you can see.' In our narrative review presented in this issue of the Journal, we have looked backward on a large body of knowledge describing the structural, biomechanical, and physiologic implications of discogenic degeneration on the human motion segment. We also look at how contemporary research using modern imaging technology has confirmed many of the assertions of the early researchers.

We can now say without hesitation that the nearly universal byproducts of lumbar disc degeneration are diminished tissue integrity [2,3], altered loading response [4–6], and segmental instability [7–12]. In the context of the current neurophysiologic interpretation of manual therapy effect, it has been suggested that the technique may not matter as much as the application of the force to the patient [13]. We feel this discounts the importance of understanding the interaction between our manual techniques and our patient's tissues.

Manual therapy, like most rehabilitation interventions, introduces force to the tissues, and the OMPT must have a thorough understanding of how our forces influence tissue healing [14]. Based on the existing evidence regarding DDD, we know that application of forced rotation stresses the annulus [15,16], spinal flexion decreases the ability of the facet joints to limit rotation [15,16], discogenic degeneration allows greater segmental rotation to occur [3,9,10,17,18], and the annulus has a lower ability to tolerate rotational stress [2]. This leads to some important questions: 'How do we best apply mechanical forces to relieve pain and encourage healing for patients with DDD?', and perhaps more importantly: 'Why do we (still) apply flexion biased rotational manipulations in this population?' The influence of manual therapy is not purely biomechanical [13], but there is clearly more than neurophysiology to consider. We must not ignore the research regarding discogenic degeneration, and we must utilize this evidence as we make clinical decisions about the force, amplitude, and direction of our manipulative interventions.

In this issue, we present a narrative review of discogenic degeneration, which we hope will inform clinical reasoning and drive further debate regarding the role of this 'normal' finding. We ask that all OMPTs look

backward and reflect on the science presented in this narrative. Then, moving forward, apply your manual skills in a way that protects our patient's motion segments- segments that have become less structurally sound due to disc degeneration. The time has come to dispense with the word 'disease' during our discussions of DDD. As for 'degenerative disc', the words still matter, and rejecting the science of discogenic degeneration in OMPT practice is as heretical as a rejection of hand washing.

Disclosure statement

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Brian T. Swanson

1Department of Rehabilitation Sciences, University of Hartford, West Hartford, CT, USA,

Brian T. Swanson

 bswanson@hartford.edu Department of Rehabilitation Sciences, University of Hartford, West Hartford, CT, USA

Douglas Creighton

2School of Health Sciences, Oakland University, Rochester, MI, USA