THE STOPS TRIAL VERSUS COSTA ET AL. AN ACCURATE ANALYSIS

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We thank Travers et al for highlighting the results of the STOPS trial (1). However, a number of their assertions are factually wrong and we strongly disagree with their interpretation of our results.

Travers et al argue that the recovery trajectory of the STOPS comparison group (guideline-based advice) was worse than for participant data from a meta-analysis of cohort studies by Costa et al (2). They propose the reason for this was our advice group receiving a pathoanatomical explanation as a component of the advice intervention that may have had a negative effect. Travers et al conclude that the lower than expected recovery trajectory for the STOPS advice group renders our statistically and likely clinically important results favouring the STOPS primary intervention (individualised physiotherapy) over advice as potentially invalid.

**Comparing apples with apples**

Practitioners (3) and researchers (4) understand that the validity and utility of research for clinical practice is influenced by the complexity of low back disorders (LBD) (5). It is therefore essential that interpretation and comparison of research data is conducted using the principle of “apples for apples”. Travers et al suggest that the participants in the Costa et al meta-analysis were “broadly comparable” to those in the STOPS trial. A closer analysis reveals that this is not the case.

Travers et al compare the Costa et al recovery trajectories for “acute/subacute” LBD to the STOPS participants. However, this comparison is based on the authors’ erroneous assertion that the Costa’s acute group had a symptom duration of 0-12 weeks; when in fact it was 0-6 weeks. This renders the data from the Travers et al (Figures 1 and 2) on acute LBD irrelevant given the STOPS trials excluded participants with symptom durations of less than 6-weeks. Only the comparison with the “persistent” LBD group is relevant.

The STOPS trial recruited participants with symptom durations of 6-weeks to 6-months (mean of 15.4 weeks). This seems broadly comparable with the Costa et al participants with a persistent symptom duration of greater than 6 weeks. However less than 5% of the participants in their review had a symptom duration of over 12-weeks compared to 198/300 (66%) of participants in the STOPS trial. This means the STOPS participants had a substantially longer symptom duration than persistent pain participants in Costa et al, and consequently a worse prognosis (6). Other unique characteristics of the STOPS trial participants relative to the studies in the Costa meta-analysis include the higher rate of disc herniation with associated radiculopathy (18%), and the low loss to follow-up (7% at 12-months). On this basis the attempted comparison by Travers et al between the STOPS trial data and the Costa et al recovery trajectories (Figures 1 and 2) is not “apples for apples”.

To account for the erroneous assumptions by Travers et al regarding duration of symptoms, we extracted the pain data from the STOPS advice group for participants who had a 6-12 week symptom duration and plotted it against the Costa et al persistent LBD data (Figure 1). When this comparison is made the trajectory lines between papers are very similar, with the Costa trendline falling within the 95% confidence interval of every STOPS trial data point.
In addition, Travers et al only included the pain data from Costa et al in their comparison. When the disability data from Costa et al are compared to the STOPS advice group (again for participants with 6-12 week symptom duration), the recovery trajectories are very similar. In fact at 1-year follow-up, the STOPS advice group may have had superior outcomes compared to the Costa et al participants, given the entire 95% confidence interval for this STOPS data point falls below the Costa trendline.
Figure 2 Course of disability in patients with persistent low back disorders from Costa et al3 versus the STOPS trial advice participants with 6-12 week symptom duration by Ford et al2 (figure reproduced with permission from the publishers).

On the basis of a scientifically appropriate and accurate interpretation of the Costa et al meta-analysis, it is clear that the proposition that the STOPS recovery trajectories are worse than expected is wrong. Therefore, questioning the conclusions of the STOPS trial on the basis of these data is not appropriate. This demonstrates that comparing RCT results to other data sets such as the Costa et al meta-analysis of cohort studies should only be done with caution and interpreted with care.

Do we know the impact of advice including a pathoanatomical explanation?

Travers et al suggest it is likely that the pathoanatomical component of the STOPS advice had a negative effect on participant outcomes based on “increase(d) perceptions of threat/fragility… exacerbation (of) the pain experience, (and) discouraging early return to normal activities”. Guidelines recommend advice as a primary treatment for acute and subacute LBD (7) despite limited or conflicting evidence (8). Our sample could be best described as sub-acute and in this population, the RCT investigating advice with the largest effects included a pathoanatomical explanation (9). Given this evidence of effectiveness, we based the STOPS advice intervention on the Indahl et al protocol (9).

While it is possible that a pathoanatomical explanation may result in adverse outcomes, data to support this proposition are sparse (10, 11) or have a high risk of bias (12). The outcomes from other trials that have used advice without a pathoanatomical explanation (13) are worse than those reported in the STOPS trial or the original trial by Indahl et al. Patients value explanations that include a provisional diagnosis (14) and our advice intervention was consistent with the biopsychosocial model, incorporating both a biomedical and psychosocial component (15). The pathoanatomical advice was a small component of the overall advice intervention, with the majority of the consultation time providing reassurance and encouragement to remain active. The STOPS advice intervention was therefore not comparable to studies cited by Travers et al that investigated the effect of a pathoanatomical explanation in isolation (16). To our knowledge there is no evidence that advice combining a pathoanatomical diagnosis with reassurance and encouragement to be active is ineffective. Indeed, this approach is consistent with recent high quality clinical guidelines (17).

Finally with our RCT design, we would like to emphasise that both groups received the same advice intervention. Therefore the between-group differences were due to the individualised physiotherapy rather than the advice
component. Even if our advice intervention did result in suboptimal outcomes, both groups would have experienced the same degree of negative impact. The important finding of the STOPS trial is that advice was received by both groups, and whatever the effect of this intervention (helpful or otherwise), the superior results in the primary intervention group were attributable to the individualised physiotherapy.

**Conclusion.**

The assertion by Travers et al that the results of the STOPS trial should be reconsidered based on the negative impact of advice incorporating a pathoanatomical explanation is not substantiated. Specifically, the recovery trajectory of participants in the STOPS comparison group (guideline-based advice) who were most comparable to the participants in Costa et al were very similar to the trajectories depicted in that meta-analysis. Further, our RCT design in which both groups received the same guideline-based advice, controls for any effect of that intervention. We therefore stand by the results of the STOPS trial and assert strongly that our trial provides high quality evidence that individualised physiotherapy with advice is statistically and likely clinically significantly better than advice alone in improving outcomes for people with LBD.
REFERENCES


8. Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica [Internet]. The Cochrane Collaboration. 2010.


