













## Comparison of Digital Musculoskeletal (MSK) Solutions

	 Hinge Health	 SWORD HEALTH	 PHYSERA <small>by omada</small>	 kaia
<b>Key Points</b>	<ul style="list-style-type: none"> <li>• US Enterprise market leader</li> <li>• Only solution with end-to-end Digital MSK Clinic</li> <li>• Only solution with 4 published studies demonstrating pain reduction, surgery avoidance, and financial savings</li> <li>• First-dollar coverage eligible</li> </ul>	<ul style="list-style-type: none"> <li>• Small-scale studies all focused on post-surgery rehab, none on chronic MSK to prevent surgeries</li> <li>• HQ &amp; engineers based in Portugal</li> <li>• 21% of Sword participant dropout rate (3x avg)-<a href="#">Validation Institute Study (2020)</a></li> <li>• Charges per episode</li> </ul>	<ul style="list-style-type: none"> <li>• 0 published clinical studies and no proven outcomes</li> <li>• 5 programs “for ALL MSK injuries”</li> <li>• Charges per episode</li> </ul>	<ul style="list-style-type: none"> <li>• Studies<sup>8,9</sup> found <b>no correlation between Kaia app and pain reduction.</b></li> <li>• User base mostly non-US.</li> <li>• HQ &amp; engineers based in Germany</li> <li>• Charges per episode</li> </ul>
<b>Company Background</b>	<ul style="list-style-type: none"> <li>• Founded in 2014</li> <li>• 600+ employees</li> <li>• \$426M in funding</li> </ul>	<ul style="list-style-type: none"> <li>• Founded in 2015</li> <li>• &lt; 145 employees</li> <li>• \$50M in funding</li> </ul>	<ul style="list-style-type: none"> <li>• Founded in 2016</li> <li>• &lt; 40 employees</li> <li>• \$10.8M in funding, acquired by Omada</li> </ul>	<ul style="list-style-type: none"> <li>• Founded in 2016</li> <li>• &gt; 99 employees</li> <li>• \$48M in funding</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Software and sensor guided exercise therapy.</li> <li>• Enso for non-addictive, non-invasive immediate MSK pain relief</li> </ul>	Software and sensor guided exercise therapy	Software-only	Software-only
<b>Clinical Support</b>	In-house physicians and orthopedic surgeons, licensed Doctors of Physical Therapy, board-certified health coaches, team of specialists (nutritionists, nurses, counselors, and more)	PT only (not all Doctors of Physical Therapy)	PT-only: part-time contractors, not FTEs	Health coach only
<b>Participant Support</b>	Access in app to call/text on-staff HH support person anytime between 6am - 6pm PT	Support calls reported as unresponsive.	No support phone number offered in app. Help through outsource service	Unknown

	 <b>Hinge Health</b>	 <b>SWORD HEALTH</b>	 <b>PHYSERA</b> by omada	 <b>kaia</b>
<b>Enterprise Experience</b>	<ul style="list-style-type: none"> <li>• 300+ US enterprise clients, 100% client retention</li> <li>• ROI guarantee</li> <li>• HITRUST CSF, SOC 2 certified</li> <li>• Vetted and chosen by 20 health insurers and PBMs</li> </ul>	<ul style="list-style-type: none"> <li>• 20 US enterprise clients</li> <li>• HITRUST CSF, SOC 2 certified</li> </ul>	<ul style="list-style-type: none"> <li>• 20 US enterprise clients</li> <li>• Unknown client retention rate</li> <li>• No IT security certifications</li> <li>• Not First Dollar Coverage eligible</li> </ul>	<ul style="list-style-type: none"> <li>• 30 US enterprise clients</li> <li>• No IT security certifications</li> </ul>
<b>MSK Care Programs</b>	<ul style="list-style-type: none"> <li>• 4 distinct, dedicated programs for prevention, chronic, acute, and post-surgical rehab</li> <li>• 100% body parts covered</li> <li>• FREE Prevention &amp; Expert Medical Opinion for entire memberbase</li> </ul>	<ul style="list-style-type: none"> <li>• 1-provider-fits-all approach for their entire population (before 2020, only covered post-surgical rehab)</li> <li>• 100% body parts covered</li> </ul>	<ul style="list-style-type: none"> <li>• 5 programs for “ALL MSK injuries”: Prevention, PT consultation, self-guided recovery, PT-guided recovery, post-care</li> <li>• 100% body parts covered</li> <li>• Fee per episode model</li> </ul>	<ul style="list-style-type: none"> <li>• 1-provider-fits-all approach for their entire population</li> <li>• 100% body parts covered</li> </ul>
<b>App Store Review</b>	2400 reviews 4.9 rating (#1 rated)	9 reviews 4.6 rating	796 reviews 4.7 rating	1,600 reviews 4.4 rating
<b>Long-term Outcomes</b>	<ul style="list-style-type: none"> <li>• The average pain reduction at 2 years was 51%<sup>5</sup></li> <li>• 7 out of 10 still do exercises after 2 years<sup>5</sup></li> </ul>	None. First active customer started in 2020	None	None
<b>Published Peer-reviewed Clinical Studies</b>	<ul style="list-style-type: none"> <li>• 4 studies</li> <li>• 10,644 total participants</li> <li>• 2 randomized controlled trials</li> <li>• RCT showed average savings of \$4336.63/participant</li> </ul>	<ul style="list-style-type: none"> <li>• 3 studies (all on post-surgery)</li> <li>• 204 total participants</li> <li>• 3 randomized control trials</li> <li>• 0 studies showing cost savings</li> <li>• 0 studies showing pain reduction without surgery</li> </ul>	<ul style="list-style-type: none"> <li>• 0 studies</li> <li>• 0 total participants</li> <li>• 0 studies showing cost savings</li> </ul>	<ul style="list-style-type: none"> <li>• 4 studies</li> <li>• 2,777 total participants</li> <li>• 2 Randomized Control Trials</li> <li>• 0 studies showing cost savings</li> </ul>
<b>Medical claims analysis</b>	<ul style="list-style-type: none"> <li>• 2-year, multi-employer, control-matched medical claims analysis reflecting a 2.26x ROI</li> </ul>	<ul style="list-style-type: none"> <li>• 0 medical claims analysis</li> </ul>	<ul style="list-style-type: none"> <li>• 0 medical claims analysis</li> </ul>	<ul style="list-style-type: none"> <li>• 0 medical claims analysis</li> </ul>

				
<b>Clinical outcomes on chronic MSK conditions based on published studies</b>				
<b>Sustained Engagement</b>	73%, 12 wk <sup>4</sup> (N=10,264)	None (only has post-surgery data)	None	54%, 12 wk <sup>7</sup> (N=1,251)
<b>Pain Reduction</b>	69% reduction, 12wk <sup>4</sup> (N=10,264)	<ul style="list-style-type: none"> <li>• None for chronic MSK.</li> <li>• Only has post-surgery data: 58% pain reduction, 12wk<sup>10</sup></li> </ul>	None	33% reduction, 12wk <sup>9</sup> (N=1,245)
<b>Surgery Reduction</b>	67% reduction <sup>4</sup> (N=10,264)	None	None	None
<b>Anxiety &amp; Depression</b>	58% reduction <sup>4</sup> (N=10,264)	None	None	None

## References: Published Clinical Studies

### Hinge Health - 4 published studies on chronic MSK

1. *Smittenaar, et al. (2017). [12-Week and 6-Month Outcomes \(Knee\)](#). Retrospective Study. **N=41***

  - a. Each participant avg. pain reduction (VAS - Visual Analog Scale. Unidimensional measure of pain intensity (0–100), 100 is highest):
    - i. 57% at 12 weeks
    - ii. 60% at 6 months
  - b. 5-year surgery reduction:
    - i. 67% at 12 weeks
    - ii. 69% at 6 months

2. *Mecklenburg, et al. (2018). [Effects of a Digital Care Program \(Knee\)](#). Randomized Controlled Trial. **N=162** (101 treatment, 61 control)*

  - a. Each participant avg. pain reduction (VAS):
    - i. 61% vs. 21% control at 12 weeks
  - b. 5-year surgery reduction:

- i. 63% vs. 17% control at 12 weeks
  - c. Avg. weekly engagement per participant: 95%
  - d. Net cost savings per year: \$4340 per participant
- 3. *Bailey, et al. (2019)*. [Effects of a Digital Care Program \(Low Back\)](#). Randomized Controlled Trial. **N=177** (113 treatment, 64 control)
  - a. Each participant avg. pain reduction (VAS):
    - i. 62% vs. 3% control at 12 weeks
  - b. Avg. weekly engagement PP: 90%
- 4. *Bailey, et al. (2020)*. [Digital Care for Chronic Musculoskeletal Pain: 10,000 Participant Longitudinal Cohort Study](#). **N=10,264**
  - a. Avoided 2 in 3 surgeries
  - b. Each participant avg. pain reduction (VAS):
    - i. 69% at 12 weeks
  - c. 58% improvement in depression and anxiety at 12 weeks
  - d. 73% completion at 12 weeks
  - e. Pain reduction directly correlated with Hinge Health exercise therapy and coach interactions
- 5. *Krauss, et al. (2021)*. [2 Year Outcomes Comparison Study: Demonstrated long-term back and joint pain relief](#). **N=276**

#### Kaia - 4 published studies

- 6. *Huber, et al. (2017)*. [Short-Term Results \(Low Back\)](#). Retrospective Study. **N=180**
  - a. Each participant avg. pain reduction (NRS - Numeric Rating Scale. A whole number version of the VAS (0–10 integers), 10 highest):
    - i. 21.9% at 12 weeks
  - b. 17.8% completion rate at 12 weeks
- 7. *Clement, et al. (2018)*. [User Retention \(Low Back\)](#). Retroactive Cohort Study. **N=1251** (196 version 0.x, 1055 version 1.x)
  - a. 54% completion at 12 weeks
- 8. *Toelle, et al (2019)*. [App-based Back Treatment vs PT Plus Education, Randomized Control Trial](#). **N=101** (53 treatment, 48 control)
  - a. Participant avg. pain reduction (NRS):
    - i. 47% vs. 37% PT control at 12 weeks
  - b. No correlation between Kaia App activity and pain reduction
- 9. *Priebe, et al (2020)*. [Digital Treatment of Back Pain vs. Standard Care](#). **N=1,245** (933, treatment, 312 control)
  - a. Participant avg. pain reduction:
    - i. 33.3% vs. 14.3% control
  - b. No correlation between Kaia App activity and pain reduction

### Sword - 3 published studies (on post-surgery only)

10. *Correia, et al. (2018)*. [Conventional vs. Home-based Rehab \(Knee\)](#). **N=69** (38 home-based, 31 conventional/control)
  - a. Post-surgery rehab avg. pain reduction (KOOS - The Knee/HIP Injury and Osteoarthritis Outcome Score):
    - i. 57% vs. 34% control at 8 weeks
  
11. *Correia, et al. (2019)*. [Medium-Term Outcomes: Digital vs. Conventional Rehab \(Knee\)](#). **N=69** (38 digital, 31 conventional/control)
  - a. Post-surgery rehab avg. pain reduction (KOOS):
    - i. 58% vs. 31% control at 12 weeks
  
12. *Correia, et al. (2019)*. [Conventional vs. Home-based Rehab \(Hip\)](#). Parallel Group Pilot Study. **N=66** (35 home-based, 31 conventional/control)
  - a. Post-surgery rehab avg. pain reduction (HOOS):
    - i. 60% vs. 60% control at 8 weeks
  - b. Post-surgery rehab avg. pain reduction (HOOS):
    - i. 65% vs. 53% control at 6 months