# University of Vermont Graduate Writing Center
## Writing an Abstract in the Health Sciences

### Introduction:

An abstract is concise and informative summary of your research that presents
- the question you address and why it matters for practitioners and patients in your field (Background & Objectives)
- how you researched this problem (Methods),
- what you found (Results), and
- what these results mean for clinical practice, including limitations and recommendations for further research (Implications).

In this handout we annotate section by section the abstracts (of about 290 words each) from a 2017 DPT systematic literature review and from a 2017 DPT research paper. Use these as "mentor texts," a guide to creating a first draft of your abstract.

*Mentor Text 1:* "The Addition of Motor Imagery to Physical Therapy Intervention May Improve Gait and Function for Patients with Parkinson's Disease" by Moriah M. Anderson, Rachel M. de Simone, Nathan P. Etre, Danielle J. Suffredini, and Jacqueline K. Vachon

| Background & Objectives (Abstract Text): | Background & Objectives (Annotation): |
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| Rehabilitation has begun to focus on helping people with neurological disorders create new ways of initiating movement. Motor imagery (MI) is a process of visualizing movement as a means to improve motor function. MI has been used in the rehabilitation of patients with stroke, spinal cord injury, and amputation, and may be of similar benefit to patients with Parkinson's Disease (PD). This systematic literature review synthesizes the evidence to answer the question: when compared to traditional physical therapy interventions, does the addition of motor imagery improve movement dysfunction in patients with PD. | The authors start with a broader trend (Sentence 1), then introduce a specific therapeutic development, its usual patient context, and its possible benefits for patients with Parkinson's (Sentences 2-3). They end by stating the question their systematic literature review aims to answer (Sentence 4). <br><br> This section is written for an educated but non-specialist audience. The authors create readability for this audience by defining a key term (motor imagery) and by moving from "known" to "new" information: a recent focus on helping people with neurological disorders initiate movement (Sentence 1) introduces motor imagery (Sentence 2) and its rehabilitative uses and potential (Sentence 3), leading to the question of what evidence the literature |

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| **Methods (Abstract Text):**<br>Articles were selected from a literature search of Ovid-Medline, CINAHL, Cochrane Library, PEDro risk assessment, PsycInfo, and Web of Science using established inclusion and exclusion criteria. The methodological quality was assessed via OCEBM to determine the levels of evidence and grades of recommendation. Additionally, all randomized controlled trials were assessed using the PEDro scale. | **Methods (Annotation):**<br>In three sentences, the authors communicate to a non-specialist audience *what* they did (select and assess articles).<br><br>In these same three sentences, the authors communicate to a specialist audience *where* they searched, *how* they selected articles, and *how* they assessed the evidence. |
| **Results (Abstract Text):**<br>Seven articles were selected for review. Our review showed that MI may be effective in improving gait and functional tasks in people with PD. MI may also be most effective when combined with other movement strategies. Furthermore, MI appears to be most effective when sessions occur more than once throughout an intervention plan. Lastly, MI may be most effective when practiced on medication. | **Results (Annotations):**<br>After presenting the results of the literature selection process (Sentence 1), the authors present a short answer to their question—MI *may be* effective (Sentence 2)—and then extend that answer with three additional conditions (Sentences 3, 4, 5) that may boost "effective" to "most effective."<br><br>The authors' use of conditional or hedging language—"may be" and "appears to be"—signals readers that the next section, Implications, will include. |
| **Implications (Abstract Text):**<br>The addition of MI to traditional physical therapy interventions is an innovative intervention option and may be effective in managing movement dysfunction in patients with PD. Limitations of the current systematic review include small sample sizes, lack of standardized outcome measures, and lack of consistent delivery methods between studies. Further research is necessary to determine specific dosage, duration, technique combination, and type of mental image needed to optimize MI and produce the best intervention outcome for PD. | **Implications (Annotations):**<br>This section begins with what the authors now know that wasn't known before the systematic review: MI as an *addition* to traditional therapy is an innovative *option* and it *may* be effective for patients with Parkinson's (Sentence 1).<br><br>The authors conclude by summarizing three limitations of their review (Sentence 2) and by recommending four specific areas of research still needed (Sentence 3). |

*Mentor Text 2:* *"Clinician Expectations of Full Thickness Rotator Cuff Repair Surgical Outcomes" by Laning, S.G., Linde, A.C., Rooks, A.M., Schwaegerle, K.A., Escorpizo, R.S., Endres, N.K., Michener, L.A., Failla, M.J.*

Background & Objectives (Abstract Text)

Approximately 250,000 people undergo elective rotator cuff repair surgery (RCRS) in the U.S. annually. Research on other common orthopedic surgeries reveals a gap between provider outcome expectations and actual outcomes. In order to improve patient education, it's important to identify differences between provider's expectations and outcomes reported in the literature. The purpose of this study is to examine provider expectations of outcomes after full-thickness RCRS, and if expectations differ between clinician experience level.

Background & Objectives (Annotations):

For a non-specialist audience, the authors create a readable, cohesive story by moving from

- a specific procedure (Sentence 1: RCRS surgeries) to
- a broader class and the problem research reveals in that broader class (Sentence 2: *other common* orthopedic surgeries and expected versus actual outcomes) to
- why the problem matters (Sentence 3: patient education) before returning to the opening specific procedure and the study's purpose (Sentence 4: expectations versus outcomes in RCRS).

Methods (Abstract Text):

604 clinicians were surveyed anonymously from the Orthopaedic section of the American Physical Therapy Association and local physical therapy clinics. An 18-question multiple-choice survey assessed provider demographics, time spent reading literature, and expected outcomes of RCRS 1-2 years after surgery. Providers were dichotomized by experience level into two groups: >10 years (A) and 0-10 years (B). Descriptive statistics and Chi-square tests were used to report expectations overall and between groups.

Methods (Annotations):

In this section the authors move from

- who was surveyed and how (Sentences 1 and 2) to
- what the authors did to disseminate and understand the results (Sentences 3 and 4)

The last two sentences especially address the reader needs of a discerning specialist audience sensitive to methods for survey analyses.

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| **Results (Abstract Text):**<br>Of the clinicians surveyed, 71.4% expected full range of motion, 66.9% expected full strength, 78.8% expected full function, 53.0% expected minimal to moderate risk of re-tear and 97.0% expected minimal to no pain one to two years after full-thickness RCRS. There were no significant differences between group responses in expectations of minimal to no pain (A 97.5%; B 96.2%; p=.358); return to full function (76.7%; 82.0%; p=.119); expected full range of motion (71.0%; 72.0%; p=.789); expectation of full strength (65.8%; 68.6%; p=.464) and expectation of minimal to moderate risk of re-tear (56.2%; 48.1%; p=.053). | **Results (Annotations):**<br>Without additional commentary, the authors report the survey results: they *show* through the data, rather than *tell* with evaluative statements, the high outcome expectations of clinicians, whether they have fewer than or more than 10 years of surgical experience. |
| **Implications (Abstract Text):**<br>Results indicate that all clinicians over-estimate RCRS outcomes, regardless of experience level. The gap between provider expected outcomes and actual outcomes may impact clinicians' ability to provide accurately informed patient education.  Further research is required to determine the cause(s) of this gap and interventions to reduce it. | **Implications (Annotations):**<br>The authors interpret the data, (Sentence 1: overestimation of outcomes), name the problem that is now visible (Sentence 2: a gap preventing accurate patient information), and call for further research that this study creates a need for (Sentence 3: determining the gap's causes and remedies). |