WELCOME

September 3-6, 2023

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Psychosocial Aspects of SCI

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Academy of Spinal Cord Injury Professionals, Inc.™
Many Minds. One Vision.

DISCLOSURE

Dr. Ames has no relevant financial relationships to disclose related to this activity.

The views expressed in this presentation are those of the presenter and do not reflect the official policy of the Department of Veterans Affairs, the U.S. Government, or the Baylor College of Medicine.

LEARNING OBJECTIVES

At the conclusion of this presentation, the learner will be able to:

1. identify psychological & cognitive complications of SCI;
2. relate common mental health diagnoses & implications for psychosocial adjustment;
3. articulate areas for intervention that promote health & well-being after SCI.

SCI Board Exam Outline

specifies several relevant areas

- **Complications of SCI: Cognitive and psychological**
- **Patient Evaluation and Diagnosis: Psychosocial evaluation**
- **Patient Management: Addressing Psychosocial issues**

General Framework:

- Biopsychosocial model (Weiner, 2008; Borrel-Carrio et al., 2004)
  - Outcome in chronic illness or disability is determined by interaction of medical, psychological and social variables

Psychosocial Issues in SCI

(Budd et al., 2022)

- **Depression**
- **Anxiety**
- **Suicide**
- **Cognitive impairment affecting coping and new learning**
- **Sleep Disturbance**
- **Pain**
- **Substance use**
- **Quality of life**
- **Sexual adjustment**
- **Resilience and Coping**

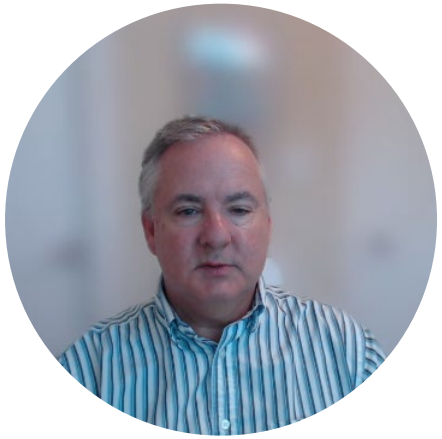
Depression Epidemiology

- US Adults (36k; Hasin et al., 2018)
  - 12-month MDD prevalence 10.4%

- SCI populations meta-analysis (Williams & Murray, 2015)
  - Depression prevalence 22%
  - Depression point prevalence 28% of Veterans

- SCI populations (Craig et al., 2009)
  - 20–40 % Depressive Disorder first 6 to 8 months post SCI
  - probable MDD in community -> 17 to 24%

Depression and SCI



- Fann et al. (2011) cross-sectional study of 947 individuals receiving SCI Model Systems services
  - 23% probable Major Depression (PHQ-9 score = 10 or greater)
- Among those depressed:
  - 29% receiving an antidepressant
  - 11% receiving guideline-level antidepressant dose and duration
  - 11% receiving psychotherapy in prior 3 months
  - 6% receiving guideline-level psychotherapy in prior 3 months

Depression Impact in SCI

"Depressive symptoms are linked to a host of negative outcomes, including

- pressure ulcers and urinary tract infections,
- lower self-appraised health,
- fewer leisure activities,
- poor community mobility,
- poor social integration,
- and fewer meaningful social pursuits.
- Depressive symptoms even predict mortality after controlling for other injury severity– and health-related variables."

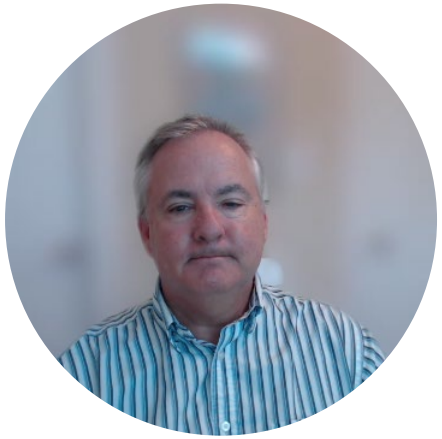
Hoffman et al. (2011)

Depression Trajectories in SCI

- Bombardier 2016 trajectory study literature review:
  - 54% - 62% never depressed
  - 20% - 21% persistently depressed
  - 18% - 25% recovered from depression
  - 30% who were depressed/anxious after SCI remained so 1 - 2 years after SCI

Depression Trajectory During 1st Year After SCI

Bombardier et al. (2016)



- 60.9% - 66.7% inpts on antidepressant tx (vs 29% large outpt cohort)
- 29.1% of sample experienced persistent mild-to-mod depression through first year
- Initial PHQ-9 score is strong predictor of later depression
- 89% with persistent mod-to-severe post-SCI depression had pre-injury depression diagnosis - suggesting trajectory often a continuation of or recurrence of pre-injury depressive disorder
- Greater grief symptoms, higher pain intensity and poorer initial subjective QoL (Quality of Life) predicted depression trajectory
- Those with low depression less likely to have pre-injury history of depression or other mental illness; also, less severe pain, less grief, better initial rating of QoL
- 7.1% experienced persistent moderate-to-severe depression

Depression, Healthcare Utilization & Comorbid Psychiatric Disorders after SCI

Ulrich et al. (2014)

- Comorbid conditions
  - 29.6% - Depression alone
  - 20.8% PTSD
  - 12.6% Anxiety
  - 10.2% Substance abuse
  - 7.5% Alcohol abuse
  - 3.7% Personality Disorder
  - 8% -> two or more comorbidities

Metabolic Factors & Depression Symptoms
(Consortium for Spinal Cord Medicine, 1998)

- Neurological: Encephalopathy, Dementia, TBI, migraines, etc.
- Endocrine: Thyroid, Diabetes, Hormonal disorders, etc.
- Infections and Inflammations: Fibromyalgia, Chronic Fatigue Syndrome, Lupus, etc.
- Metabolism: Hyponatremia, hypo- and hyperkalemia, hypercalcemia, hypomagnesemia, uremia
- Neoplasms
- Nutrition
- Cardiovascular

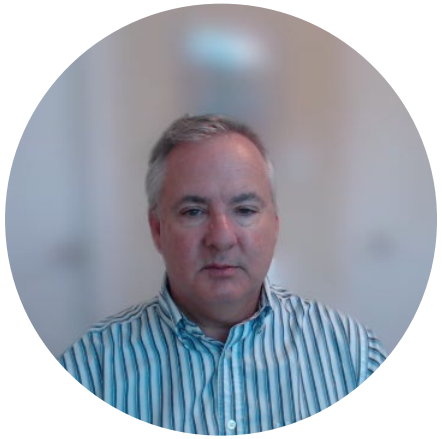
Depression Assessment

- "**SIGECAPS**" mnemonic (Maurer et al., 2018)
  - **S**leep (insomnia or hypersomnia)
  - **I**nterest (loss of interest/ pleasure in activities)
  - **G**uilt (feelings of worthlessness or sees self as bad)
  - **E**nergy (fatigue, decreased interest)
  - **C**oncentration/attention (poor attention/indecisive)
  - **A**ppetite (decrease or increase)
  - **P**sychomotor (agitation or slowing)
  - **S**uicidal ideation (plans and/or past attempts)

  - Presence of 4 or more plus depressed mood or anhedonia
  - **Suicidal ideation very concerning in and of itself**

Suicide Awareness

(Charlifue & Gerhart, 1991; Kennedy & Garmon-Jones, 2017; Cao et al., 2014; McCullumsmith et al., 2014; Bombardier et al., 2021)



- Many talk about suicide, often with providers, before an attempt.
- Many people who complete suicide had a history of attempts, which may be considered rehearsals.
- Some people appear to get “better” before an attempt with an increase in energy and engagement.
- Completion: 5-10% in people with a SCI vs. 1.4% in the general population
- Suicide through overt action, self-neglect, or refusal of required care

Suicide Assessment

(Charlifue & Gerhart, 1991; Kennedy & Garmon-Jones, 2017; Cao et al., 2014; McCullumsmith et al., 2014; Bombardier et al., 2021)

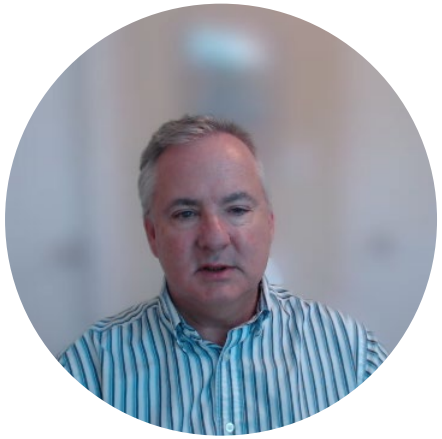
- Mood: Sadness, hopelessness, decreased interest, irritability, guilt
- Cognitive: Decreased concentration, recurrent thoughts of death, self critical, recurrent suicide thoughts including rationalization about being less of a burden
- Physical: Change in appetite, change in sleep, change in sexual interests, sluggish
- Behavior: Prior attempts, having a plan, decreased attention to self care, giving things away
- Social: Withdrawal and isolation, decreased functioning in social environments including work
- Environmental: availability of means (firearms; medication stores; opioids)

Suicide Risk Assessment

(Charlifue & Gerhart, 1991; Kennedy & Garmon-Jones, 2017; Cao et al., 2014; McCullumsmith et al., 2014; Bombardier et al., 2021)

- **"SAD PERSONS"** mnemonic
  - **S**ex (male)
  - **A**ge (adolescent and elderly)
  - **D**epression
  - **P**revious Attempts (increases risk 50-100 times)
  - **E**thanol use
  - **R**ational thinking (disorganized thinking, psychosis)
  - **S**ocial Supports (lack of family/friends or living alone)
  - **O**rganized plan (specific time, method, setting etc.)
  - **N**o Spouse/Partner (reduced support)
  - **S**ickness (35-40% related to significant medical problems)

VA Risk Assessment
(Bombardier et al., 2021)



1. Columbia Suicide Risk Severity Scale (C-SSRS)
2. Comprehensive Suicide Risk Evaluation (risk & protective factors)
3. Assure immediate safety & appropriate treatment setting
4. Safety Planning
5. Target risk factors & enhance protective factors

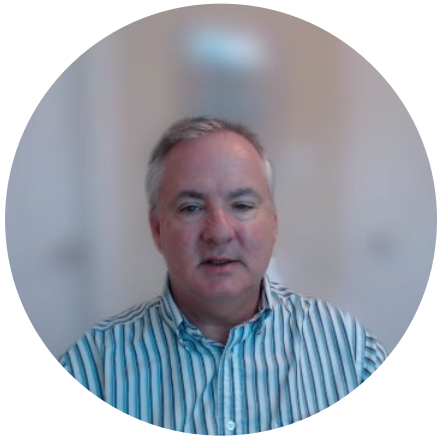
Suicide Intervention
(Bombardier et al., 2021)

- Talk to the patient about your concerns
- Assess need for inpatient care (immediacy of risk)
- Assess for plan, means, intent
- Alert mental health provider ASAP
- 1:1 supervision may be necessary and secure the environment from potential weapons
- Treatment in inpatient psychiatric units is challenging as most are not equipped for SCI (accessibility; caregiving for physical needs)

Anxiety Prevalence

- Not as well studied as depression
- Hancock et al. (1993) : Prevalence of anxiety higher in SCI vs controls 1st year after injury
  - 25% versus 5% in their sample
- Craig et al. (1994): 30% of sample had elevated anxiety scores
- Bonanno et al. (2012):
  - Majority showed low levels of anxiety over the first 2 years
  - Significant minority (~quarter) showed high anxiety that improved
  - Smaller group (~fifth) showed lower anxiety that increased
  - Most anxiety changes happened in the first year after injury

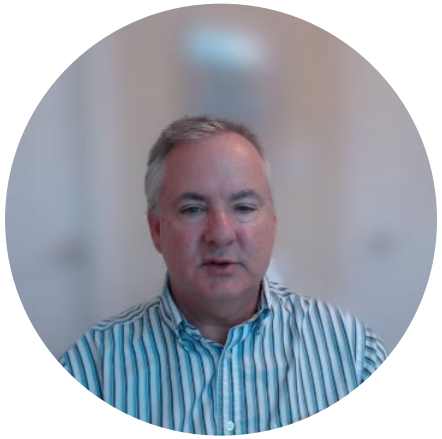
PTSD



- **Otis et al. (2012)**
  - 11% of the participants met the criteria for full PTSD, and an additional 20% met the criteria for partial PTSD at some point after their SCI
- **O'Donnell et al. (2010)**
  - ICU pts more likely to have PTSD at 12 months than trauma controls (17% vs. 7%)
  - ICU admission contributed to PTSD after controlling for demographic, preinjury mental health status, and injury characteristic variables
- **Ratzer et al. (2014)**
  - High levels of PTSD symptoms in 19.2% of respondents in six months following traumatic injury requiring ICU
- **Post ICU PTSD/PTSS**
  - associated with lower health-related quality of life (HRQoL), comorbid anxiety, and depression

PTSD is not uncommon and does not have to center around the SCI-associated injury itself

Anxiety/PTSD



- Antidepressant medications are commonly used to treat PTSD
- Psychotherapy is effective for anxiety and decreasing avoidant behaviors
- Freeman & Kautz (2018) Trauma-informed care 5 Principles

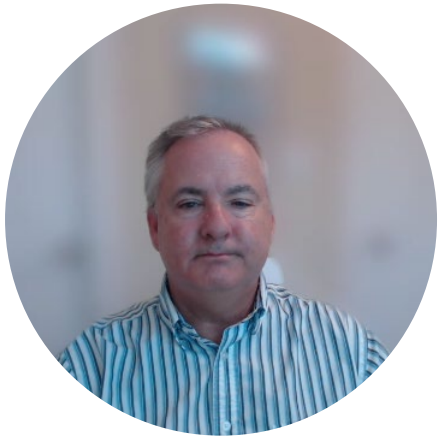
1. Safety: determining what the patient experiences as safe
2. Trustworthiness: Recognize that traumatized patients may misinterpret actions. Set and maintain clear professional boundaries
3. Choice: Clarify any information that they may seek. Small choices allow for a sense of control
4. Collaboration: plan of care implemented collaboratively
5. Empowerment: opportunities to use skills and become accountable and responsible for own health

Coping

- Many people living with spinal cord injury manage the consequences of their disability without significant levels of psychopathology (Pollard and Kennedy, 2007)

- Coping flexibility predicts higher levels of posttraumatic growth (Kunz et al., 2018)
  - Ability to use problem-focused and emotion-focused coping, as determined by circumstances
  - Situational coping flexibility

Resilience



- Guest et al. (2015)
  - 60-70% of their sample with SCI reported satisfactory levels of resilience
  - 30% remain highly vulnerable to problems such as maladaptive coping, hopelessness and negativity in the longer term -> similar to rates of probable depression in people with SCI
  - Self-efficacy, low depressive mood and low anxiety assessed at admission correlated significantly to resilience at discharge
  - Self-efficacy, low depressive mood, low anxiety, higher social support, lower pain interference assessed just before discharge correlated significantly to resilience 6 months post discharge
  - Resilience at discharge correlated with resilience 6 months post discharge

Resilience

Guest et al. (2015)

- Strengthen self-efficacy by reinforcing connection between person's behavior and intended outcomes using self-management skills such as self-monitoring
- Lower negative mood states by teaching fear reduction and anxiety management skills
- Strengthen social and vocational support networks

Sleep Disturbance in SCI

Lavela et al. (2012)

- 40-53% prevalence of OSA, some estimates of up to 69-75%
- 49% reported having non-OSA sleep dysfunction, vs 20% in the general population.
  - not associated with level of injury, duration of injury or age of onset
- Factors associated with dysfunctional sleep:
  - Nicotine use, Alcohol use, COPD, Asthma, HTN, weight gain
- Other possible contributing factors:

  Positioning, turning, discomfort, medications (disturb sleep-wake cycle/circadian rhythm, disturbed REM sleep, increased nightly arousals), lack of daytime movement, depression, pain, abnormal upper-airway and chest-wall motor activity.

Sleep Intervention
(Jensen et al., 2009)

- Psychotherapy focus on behavior changes (CBT) is efficacious treatment for persistent insomnia
- Sleep hygiene may be difficult for patients who have SCI
  - Access to control of relaxation tools (music, relaxation apps)
  - Ability to change environment
  - Relaxation techniques (Hough & Kleinginna, 2002)
  - Repositioning
- significant interaction between pain, sleep disturbance, mood and social participation

Pain and SCI

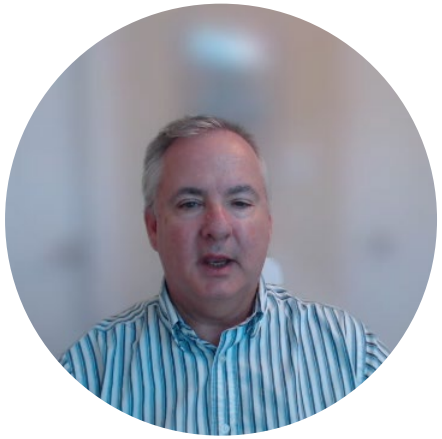
(Felix et al., 2022)

- 80% of those surveyed reported having at least 1 pain problem
- 58% reported 2 or more pain problems
- 56% had probable Neuropathic Pain
- 49% had non-Neuropathic pain

When comparing ratings for all pains, neuropathic pains were:

- more intense (6.9 vs 5.7) and interfered more with activities (5.2 vs 3.7), mood (4.9 vs 3.2), and sleep (5.4 vs 3.6) than non-neuropathic

Pain and SCI
Craig et al. (2017)



- Large number reported adversity related to chronic pain including high mean pain intensity, significant on most days each week
- Most reported using prescribed medication for pain
- Severe pain intensity more likely linked to higher levels of pain catastrophizing -> an exaggerated negative mental set arising during actual or anticipated pain experiences
  - anticipation of future negative or worst possible outcomes
  - exaggerated threat appraisal of symptoms
- Rates of elevated pain catastrophizing between 25% at admission declining to just over 13% at discharge and rising to over 22% at 12 months post-injury
- Relationship found between catastrophizing and depressive mood and anxiety at 12 months post-injury

Pain Management

Behavioral approaches (Sturgeon, 2014)

- Psychological interventions
  - Psychological interventions are cost effective, have low (if any) side effects, and increase self-efficacy/internal locus of control
- Cognitive Behavioral Therapy for Chronic Pain
- Acceptance and Commitment Therapy for Chronic Pain
- May assist with the pain focus and catastrophizing, interference in everyday life, and reducing secondary mental health challenges associated with lifestyle alterations due to pain

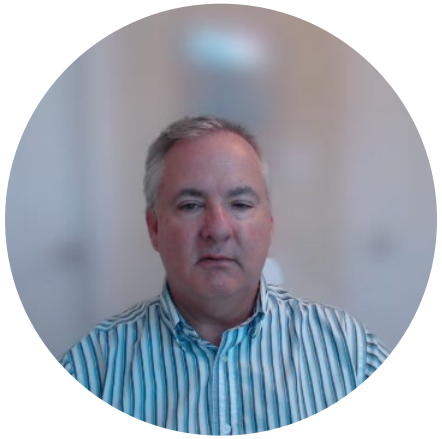
Pain Management - Positive Psychology

Muller et al. (2016)

- **Kindness:** performing good deeds for other people
- **Gratitude** counting blessings, appreciation of life, and gratitude toward persons
- **Savoring** taking delight and replaying life's momentary pleasures and wonders
- **Flow** increasing the number of challenging and absorbing (i.e., "flow") experiences
- **Taking care of the body** physical activity, being mindful with the body, smiling, and laughing
- **Spirituality** becoming more involved in seeking meaning and purpose, and being mindful
- **Relationships** making time for people, expressing admiration, appreciation, and affection
- **Goals** picking goals that are meaningful and devoting time and effort to pursuing them
- **Optimism** writing about best possible future selves, goals and subgoals
- **Forgiveness** writing about letting go of anger and resentment toward other persons

Substance Use

Tate et al. (2004)



- Community prevalence estimated as 14% alcohol abuse (up to 21%) and 11% illicit substance and prescription medication abuse
  - 90% of 18-25 year-olds use alcohol; 60% of people over 25 use alcohol
  - 51% of young adults used marijuana; 30% of older adults used
- Use declines the first few months following injury and then increases during the first and second years after.
  - Risk factors include younger, single, males, less educated
  - Alcohol abuse associated with pain & low life satisfaction
  - Pressure ulcers were associated with substance abuse

Substance Abuse

Bombardier & Turner, 2010

- 35-57% of people abused alcohol pre-SCI
  - 17-62% of people with traumatic SCI were intoxicated when injured
- 30% tested positive for illicit substances when admitted to the hospital at the time of injury
- Having an SCI likely does not increase the risk for substance abuse
  - **Substance use is likely a pre-existing factor**
- Difficult to assess prevalence due to self-report bias
  - CAGE and AUDIT are common measures
- Can address in individual or group therapy
  - Motivational Interviewing (a type of communication designed to avoid activating patient's resistance and to ally with and strengthen the patient's own desire for change)

TBI/Cognition

(Elovic & Kirschblum, 1999)

- 50% of people with SCI had a LOC at time of injury
- 25-50% of people with traumatic SCI had co-occurring residuals of traumatic brain injury (TBI)
  - Trend toward more frequent TBI in cervical injuries
- People with comorbid SCI and traumatic brain injury (TBI) are more likely to achieve smaller functional gains during rehabilitation
- Most co-occurring TBIs fall in mild category and may not have a lasting functional impact; however, acute symptoms can readily affect participation in acute rehabilitation
- Moderate-to-severe co-occurring TBI more likely to interfere with rehabilitation and longer-term adaptation

TBI/Cognition

Macciocchi et al. (2008)

- Based on presence/duration of PTA, initial GCS, and presence of cerebral lesion on neuroimaging:
  - 60% of their traumatic SCI sample also sustained a TBI (n=118)
  - Most co-occurring TBIs were mild (34%)
  - co-occurring mild complicated (10%), moderate (6%), and severe TBI (10%) were less common but still occurred in 26% with traumatic SCI
  - Those injured in motor vehicle collisions and falls were more likely to sustain a co-occurring TBI
  - Cervical level traumatic SCI was associated with greater rates of TBI but not more severe injuries

Critical Illness Impact / Cognition

(Jackson et al 2009; Skrobik & Hopkins, 2013)

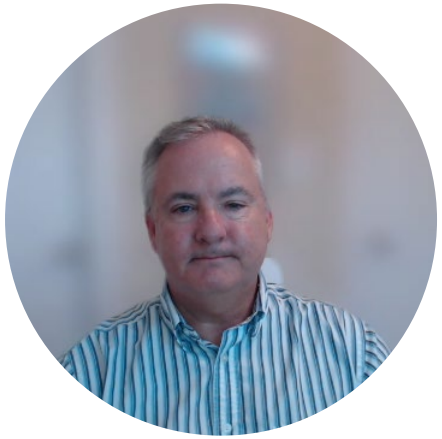
- Critical illnesses such as acute respiratory distress syndrome and sepsis are associated with substantial declines in cognitive functioning as well as significant brain atrophy
- Respiratory distress of varying degree affects the majority of SCI patients, particularly those with cervical injuries (Bauman, 2012)
- Cognitive decline following severe critical illness is often persistent
- Memory and executive functioning abilities (abilities required for the successful management of complex tasks) may be particularly vulnerable to decline following critical illness
- The precise mechanisms contributing to cognitive decline after critical illness are unclear but may include prolonged ventilation, hypoxia, delirium, and inflammation

Critical Illness Impact / Cognition

Jackson et al 2009; Skrobik & Hopkins, 2013

- Follow-up focus on the identification and management of critical illness-related cognitive decline and impairment may be an important component of patient care
- Patients admitted to acute rehabilitation from critical care or acute care units may have persisting symptoms of delirium or sub-syndromal delirium (and/or acute stress reaction)

Other potential sources of decreased cognition that may be observed during acute rehabilitation



- Persistent and/or orthostatic hypotension may predispose those with SCI to cognitive impairments, as may respiratory distress
- With increasing admissions to acute rehabilitation units of older patients and patients with spinal dysfunction and sometimes very complex medication regimens, risk factors for altered mental status during rehabilitation are of greater concern
- Monitor for changes in behavior that can signal decreased cognition or a prodrome to delirium (Duppils et al., 2004)

Sexual Adjustment

- Recommendations from the Consortium for Spinal Cord Medicine (2010)
  - Importance of Sexuality and Reproduction to the Individual
    - The PLISSIT Model (Permission, Limited Information, Specific Suggestions, and Intensive Therapy)
  - Sexual History and Assessment
  - Education
  - Maintaining Sexual Well-Being
  - Physical and Practical Considerations
    - Bladder and Bowel, Skin Care, Secondary Medical Complications, Optimal Positioning for Sexual Activity
  - Effect of Injury on Sexual Function, Responsiveness, and Expression
  - Treatment of Dysfunction
  - Effects on Fertility
  - Relationship Issues

Person First and Diversity

- person-first language most often preferred
  - “A person who is diagnosed with tetraplegia” vs. “a quadriplegic”
- Same for mental health diagnosis
  - “adjustment” implies a correct trajectory with an endpoint
  - “reaction” accounts for individual differences in coping with SCI
  - “adaptation” points to the fluid nature of person-environment fit

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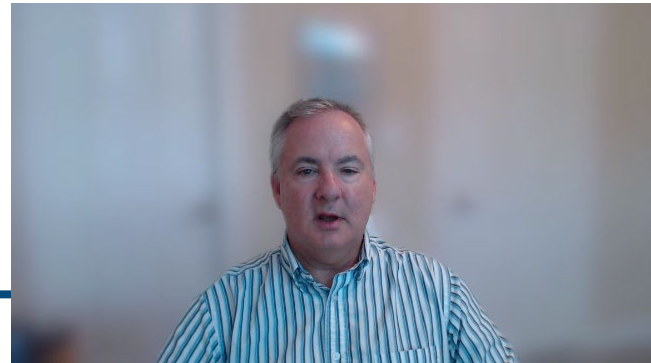

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THANK YOU!

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Q and A