How do we minimize sequelae of secondary incontinence in adulthood?

- No universal definition of “urinary incontinence” for patients with SB (Lloyd 2012), and little information related to bother/QoL for adults with urinary incontinence (primary or secondary), but incontinence among adults with spina bifida is common
  - 26.5% or a large cross sectional cohort were dry less than 4 hours with only 21.7% reporting “always” dry (Symanzski 2015)
  - Bother is highest among individuals who experience dry intervals of 4 h or less and those who used protective undergarments. (Symanzski 2015)
- No studies exist that discriminate the effects of secondary incontinence from primary incontinence in adult life
- Types of secondary incontinence include:
  - Failure of outlet (either due to failed prior BN repair, AUS, bulking agent, or with secondary treatment like TURP)
  - Progression of bladder dysfunction (due to progression or compounding of spinal disease-as with spinal stenosis or tethering; or with secondary neuropathic insult like diabetes)
  - Increased bladder outlet resistance, causing overflow (as with BPH or pelvic organ prolapse)
- Treatment should be tailored to etiology and patient with each treatment approach offering a different risk and durability profile (Carrasco 2016).
- Evaluation should include physical exam, history, and often adjuncts including urodynamics, voiding cystography, and/or cystourethroscopy
- Strong consideration of urodynamic testing should be made for all patients undergoing procedures to tighten, or relieve, bladder outlet with known coexisting neuropathic bladder preoperatively.
- Close upper tract monitoring should be reinitiated following procedures to increase outlet resistance (as with slings, AUS, bladder neck repairs) for bladders with marginal or poor compliance, as at least 1/4 will require secondary treatment for upper tract changes (lloyd, 2013; Snodgrass 2014; Szymanski 2016).
- Incontinence in adulthood has been associated with decreased sexual activity and sexual partnering activities, which may limit many aspects of health and life quality (Dicianno 2008; Cardenas 2008; Gatti 2009)
- The role of incontinence on other aspects of social participation is not well defined for adults with spina bifida (Buffart 2009; Hunt 2003)

What is the pregnancy outcome in women who have had urinary tract reconstruction? (If not covered by women’s health)

- There are limited studies.
- High rates of safety to mother, successful delivery and healthy babies, exception being in situations where emergency C/S is employed and with pre-existing reflux nephropathy, and both of these should be avoided/counseled against if at all possible.
- Elective C/S should strongly be considered in the following situations (Vordermark et al, 1990; Hill 1990):
  - Prior bladder neck reconstruction
  - Urethral surgery
  - Placement of artificial urinary sphincter
- If a C/S is planned, consideration should be given to a high or mid classical approach for those with prior pelvic surgery, particularly those with bladder augmentation (Hensle 2004; Smith 1973)
- For those patients managing their bladders with intermittent catheterization, particularly those with Mitrofanoff stomas, trouble catheterizing during pregnancy is commonplace.
  - If patients encounter that problem, an indwelling catheter should be placed across the stoma, or a suprapubic (or cecostomy) tube should be placed to drain the bladder/pouch directly (Hensle, 2004)
- Bacteruria is the norm for patients with bowel in contact with the urinary stream, or those on ISC. UTIs during pregnancy are very common. (Hensle, 2004)
  - Consideration should be given to prophylactic antibiotics with a “safe” antibiotic during pregnancy to reduce the risk of pyelonephrosis and preterm labor (Tomezko, 1997)
  - Strong recommendation for prophylactic antibiotics for patients with documented VUR (el Khatib 1994; Jungers 1996)
- Pre-delivery counseling and delivery planning is recommended for SB patients with impaired pelvic and LE function, including contractures of the LE, as they may experience:
  - Atypical onset of labor
  - Difficulty in accessing the vagina for vaginal deliveries


