3.1 The Integral Theory Diagnostic System: Overview

The Integral Theory Diagnostic System aims to locate and identify which ligaments or fascia of the pelvic floor have been damaged (fig 1-10). The Integral Theory holds that damage to one or more connective tissue structures may cause prolapse, or dysfunction in organ closure or opening. That is, prolapse and other pelvic floor symptoms are related. They are differing expressions of connective tissue defects.

The Integral Theory Diagnostic System uses a three zone approach to disentangle the complexity of symptoms. By isolating the damaged connective tissue structures which mainly cause these symptoms (fig 1-10), this approach enables the surgeon to deduce the appropriate surgical techniques to use to repair each damaged structure. Generally the damage to connective tissue structures results in excess laxity, except for the special case of excessive tightness in the middle zone in the ‘Zone of Critical Elasticity’. This ‘tethered vagina syndrome’ is usually the result of previous surgery (‘ZCE’ fig 1-10). Notwithstanding this special case, the nine main structures potentially needing surgical repair are:

Anterior Zone

**Excess Laxity**

1. External urethral ligament (EUL)
2. Suburethral vagina (hammock)
3. Pubourethral ligament (PUL)

Middle Zone

**Excess Laxity**

4. Arcus tendineus fascia pelvis (ATFP)
5. Pubocervical fascia (PCF) (midline defect - cystocele)

**Excessive tightness**

‘ZCE’ - Excessive tightness in the ‘Zone of critical elasticity’ (ZCE) (Iatrogenic cause: excess scarring; excess elevation with colposuspension)

Posterior Zone

**Excess Laxity**

7. Uterosacral ligaments (USL)
8. Rectovaginal fascia (RVF)
The three zone structure of the pelvic floor according to the Integral Theory showing the nine main structures and the special case ‘ZCE’ potentially needing surgical repair. A 3D view of the pelvis from above and behind. The dotted lines represent the pelvic brim. PCM = anterior portion of pubococcygeus muscle; LP = levator plate; LMA = longitudinal muscle of the anus; PRM = puborectalis muscle; EAS = external anal sphincter. ‘ZCE’ = ‘Tethered vagina’ - excessive tightness caused by previous surgery.

The Integral Theory Diagnostic System is an iterative process based on the perspectives of the pelvic floor anatomy and dynamics presented thus far in this book. There are two pathways: Clinical Assessment (fig.3-01), and the Structured Assessment (fig.3-02).

The Structured Assessment System, fig. 3-02 is identical to fig. 3-01, except that it applies a structured questionnaire, a 24 hour urinary diary, pad tests, transperineal ultrasound, and urodynamics.

Which pathway?

From a purely diagnostic perspective, the Clinical Assessment pathway (fig.3-01) is sufficient for most clinical surgeons. The Structured Assessment pathway (fig.3-02) is useful in assessing more complex cases such as ‘tethered vagina syndrome’, and it provides the more thorough documentation essential for tertiary referral clinics.