


# Medical Illustration - A Pictorial Essay Visual Illustration of Obstetric Anal Sphincter Injuries (OASIS) Degrees of Severity, a Picture is Worth a Thousand Words

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## Abstract

### Keywords

- ▶ obstetric anal sphincter injuries (OASIS)
- ▶ anal sphincter
- ▶ perineal tear
- ▶ faecal incontinence
- ▶ diagnostics
- ▶ treatment

Obstetric anal sphincter injury affects about 5.7% of primiparous women who deliver vaginally. Perineal injury during childbirth is a common event with important morbidity associated with third-and-fourth degree perineal tears (also referred to as obstetric anal sphincter injuries—OASIS). As there was a lack of consistency in the classification of a partial anal sphincter injury, with up to 33% of consultant obstetricians classifying a complete or partial tear of the EAS as a second-degree tear. We have proposed simple, digital diagrammatic drawings to visually represent all degrees (grades) of OASIS based on the WHO OASIS classification.

## Introduction

Obstetric anal sphincter injury affects about 5.7% of primiparous women who deliver vaginally. Perineal injury during childbirth is a common event with important morbidity associated in particular with third-and-fourth degree perineal tears (also referred to as obstetric anal sphincter injuries—OASIS).

Early diagnosis of these damages is mandatory to define a prompt therapeutic strategy and avoid the development of faecal incontinence.<sup>1</sup>

Post-delivery muscular damages are known as obstetric anal sphincter injuries (OASIS). OASIS are also referred to as third- and fourth-degree spontaneous perineal lacerations, according to the currently accepted classification.<sup>2</sup>

Traditionally, the severity of perineal tear was limited to 4 grades: grade 1 (superficial vaginal and/or perineal skin), grade 2 (vaginal muscles), grade 3 (in or through external anal sphincter muscle), and grade 4 (external and internal anal sphincters and anorectal lumen).<sup>3</sup>

As there was a lack of consistency in the classification of a partial anal sphincter, with up to 33% of consultant obstetricians classifying a complete or partial tear of the EAS as a second-degree tear<sup>4</sup> Sultan,<sup>2</sup> devised a more specific classification, later adopted by the WHO<sup>5</sup> and the International Consultation on Incontinence.<sup>6</sup> In this classification, grade 3 is further refined as involving the anal sphincter complex and is divided into 3a, 3b, and 3c (–**Table 1**).

The type of third-degree tear seems to have an impact on symptoms, with OASIS grades 3a and 3b having a better prognosis than 3c. In fact, those with a 3c OASIS had symptoms similar in severity to those with a fourth degree laceration<sup>7</sup>

A button-hole injury, where only the vaginal and rectal mucosa are involved, should not be reported as a third- or fourth-degree tear if found in isolation. Documentation of the presence or absence of a tear, as evidenced on rectal examination, should be disclosed to the patient, and

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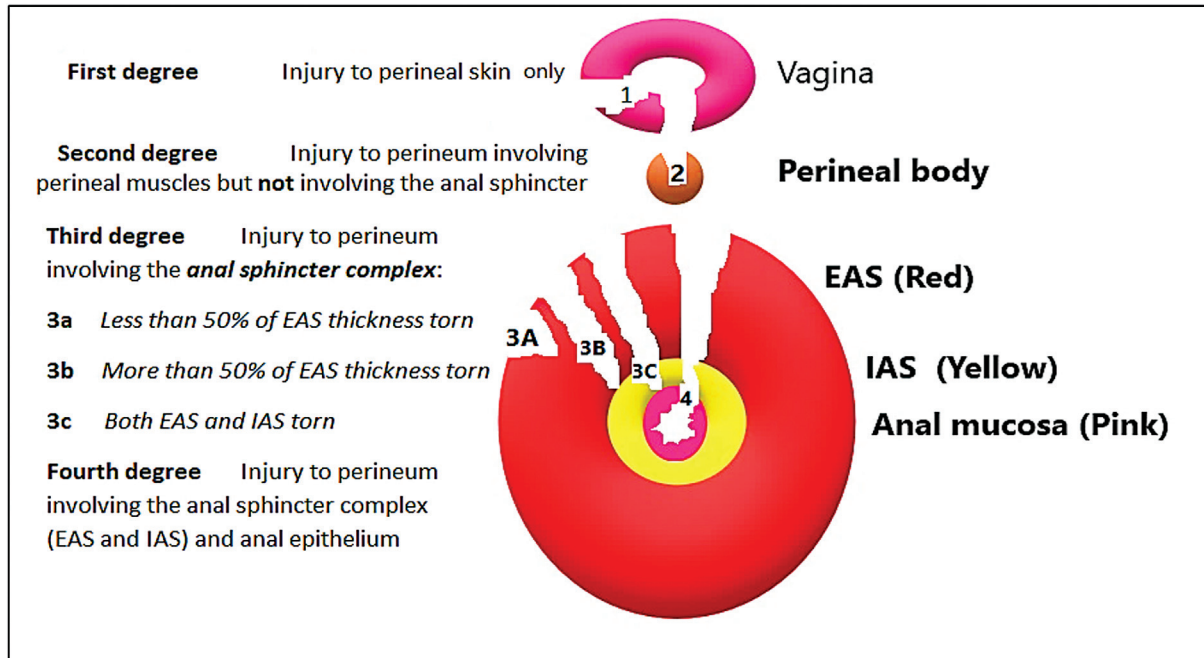
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**Table 1** WHO Classification of OASIS

First degree	Injury to perineal skin only
Second degree	Injury to perineum involving perineal muscles but not involving the anal sphincter
Third degree 3a 3b 3c	Injury to perineum involving the anal sphincter complex: 3a Less than 50% of EAS thickness torn 3b More than 50% of EAS thickness torn 3c Both EAS and IAS torn
Fourth degree	Injury to perineum involving the anal sphincter complex (EAS and IAS) and anal epithelium

Source: World Health Organization. International Classification of Diseases (ICD). Geneva (CG): WHO; 2015. Available at: <http://www.who.int/classifications/icd/en>. Accessed on September 15, 2015.

**Fig.1** Visual illustration of obstetric anal sphincter injuries (OASIS) grading of severity.

incorporated into the delivery note, and repair should be done to avoid fistulization.

The World Health Organization classification should be used to classify obstetrical anal sphincter injury. This distinguishes the degree of external sphincter tear (3a: < 50% or 3b:  $\geq$  50%) and the presence of internal sphincter defects (3c). A button-hole injury is distinct and should be classified separately as such. ► **Table 1**

Such a grading system considers the degree of tearing experienced by the external sphincter separately from that of the internal sphincter. Such distinction is meant to improve reporting, guide repair, and facilitate outcome research.<sup>8</sup>

### Aim

For better simplified, objective understanding of The WHO obstetric anal sphincter injury (OASIS) classification by physicians who are involved in the care of patients with such anal sphincter injuries including obstetricians, general surgeons & even midwives, We have proposed simple, digital diagrammatic drawings ► **Figure 1** ( using *Paint 3D* program

on *Microsoft Windows10* then edited on *Paint* program on *Windows 10* ) to visually represent all degrees (Grades ) of based on the WHO OASIS classification table.1

### Conclusion

We hope that providing such a simple, diagrammatic digital illustration of anal sphincter injuries might be very helpful to fully understand, appreciate, and differentiate between each grade of anal sphincter injury, especially in performing primary repairs of these injuries which will be eventually reflected in on the proper diagnosis, management, and better outcomes.

### Declaration of Interest Statement

There are no relevant financial or non-financial competing interests to report.

### Abbreviations

OASIS: obstetric anal sphincter injuries, AI: anal incontinence, EAS: external anal sphincter, IAS: internal anal

sphincter, RTC: randomized control trial. SVD: spontaneous vaginal delivery, WHO: World Health Organization.

#### Acknowledgments

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