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**Manuscript Type:** OPINION REVIEW

**From 2-dimensional to 3-dimensional: Overcoming dilemmas in intestinal mucosal interpretation**

Charlesworth RPG *et al.* Overcoming dilemmas in intestinal mucosal interpretation

Richard PG Charlesworth, Michael N Marsh

### **Abstract**

The purpose of this review is to provide a definitive account of small intestinal mucosal structure and interpretation. The coeliac lesion has been well known, but not well described to date and this review aims to identify the interpretative difficulties which have

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**What Is A Normal Intestinal Mucosa? - Gastroenterology**

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作者: MN Marsh - 2016 - 被引用次数: 9 - 相关文章

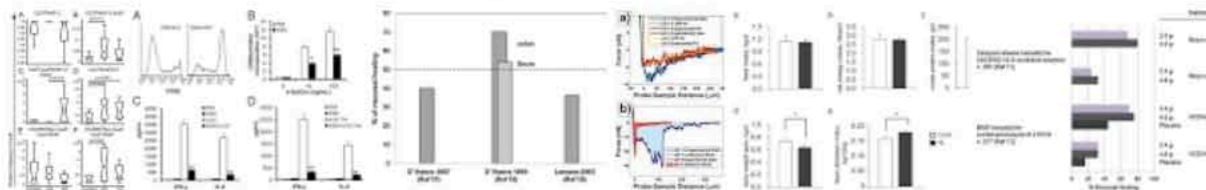
Normal **intestinal** villi were defined ... **3-dimensional mucosal** core used ... Winnowing Chaff from Wheat. **Issues** involve intraepithelial lymphocyte. (IEL) .... Early celiac **mucosal** lesions (Marsh stages 0–II) need improved recognition and ... **interpreting** the C/V borderland, identify villous cells through the flattening process, ...

**3D Cell Culture: A Review - Labome**

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2019年1月6日 - Figure 2. Schematic representation of the **3-D** cell culture through magnetic levitation. ... It is more realistic to grow cells in **3D** instead of **2D** in vitro to study the .... Fiber bonding: This technique was developed **to overcome** the limitations of .... in the creation, modification, **analysis**, or optimization of a design.

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### Application of three-dimensional imaging to the intestinal crypt ... - NCBI

<https://www.ncbi.nlm.nih.gov/pubmed/24348177> - [翻译此页](#)

作者: Y Chen - 2013 - 被引用次数: 5 - [相关文章](#)

2013年11月14日 - Application of **three-dimensional** imaging to the **intestinal** crypt organoids and biopsied **intestinal** tissues. Chen Y(1), Tsai YH(1), Liu YA(2), Lee SH(3), Tseng SH(4), Tang ... of **3-dimensional** (3D) imaging system in the **analysis** of the **intestinal** ... **Intestinal Mucosa**/pathology; **Intestinal** Pseudo-Obstruction/ ...

缺少字词: Overcoming dilemmas

### Development of a Multicellular Three-dimensional Organotypic Model ...

<https://www.ncbi.nlm.nih.gov/pubmed/27500889> - [翻译此页](#)

作者: R Salerno-Goncalves - 2016 - 被引用次数: 5 - [相关文章](#)

2016年7月25日 - (2)**Mucosal** Immunology and Biology Research Center, ... Because cells growing in a **three-dimensional** (3-D) environment ... in the early 1990s and is believed **to overcome** the limitations of static ... Here we describe the development of a multicellular **3-D** organotypic model of the human **intestinal mucosa** ...

缺少字词: dilemmas interpretation

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<https://www.labome.com/method/3D-Cell-Culture-A-Review.html> - [翻译此页](#)

2019年3月16日 - Figure 2. Schematic representation of the **3-D** cell culture through ... It is more realistic to grow cells in **3D** instead of **2D** in vitro to study the effect of .... Fiber bonding: This technique was developed **to overcome** the limitations ..... **3D** cell matrix in-growth and development of a multilayer **mucosal** structure, [81].

### three-dimensional

[https://www.amnh.org/ology/features/stufftodo.../threed\\_dimension.php](https://www.amnh.org/ology/features/stufftodo.../threed_dimension.php) - [翻译此页](#)

What are all these different **dimensions** about, anyway? Let's start at ... Two **Dimensions**: A flat plane or shape is two-**dimensional**. ... You could abbreviate that location with the coordinates 7, 2, 4 — representing the **three dimensions** of space.

缺少字词: Overcoming dilemmas intestinal mucosal interpretation

### Echocardiographic Symposium at Vail | Cardiovascular Medicine CME

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An additional focus will be on the role of **2-D** and **3-D** echocardiography in ... Integrate Doppler, **2-D**, **3-D** echocardiography for management of patients with ...

2017年7月24日 - 2019年10月12日 [Echocardiographi ...](#)

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Philippe Lefere, Stefáan Gryspeerdt - 2006 - Medical

Ann Intern Med 142(2):154–155; author reply 155 Johnson CD, Harmsen WS, ... Am J Roentgenol 143:93–97 Kelly JK (1991) Polypoid prolapsing **mucosal** folds ... Bini EJ (2004) Positional change in **colon** polyps at CT colonography. ... of using **three-dimensional** CT colonography with two-**dimensional** imaging correlation.

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缺少字词: **dilemmas interpretation**

### Development of an improved three-dimensional in vitro intestinal ...

<https://www.ncbi.nlm.nih.gov/pubmed/23350801> ▼ 翻译此页

作者: N Li - 2013 - 被引用次数: 50 - 相关文章

2013年4月21日 - Human epithelial cell culture models of monolayer Caco-2 cells have been widely ... However, cautions should be taken when **interpreting** the ... relevant **three-dimensional (3D)** culture model of the **intestinal mucosa** was ...

缺少字词: **Overcoming dilemmas**

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