WATS3D®

The New Standard of Care

Screening for Barrett's Esophagus
Surveillance of Barrett's Esophagus

NOW INCLUDED IN GI STANDARD OF PRACTICE GUIDELINES

New results published in Gastrointestinal Endoscopy *

WATS³ᴰ is 4x more effective in detecting HGD/EAC than the Seattle Protocol.
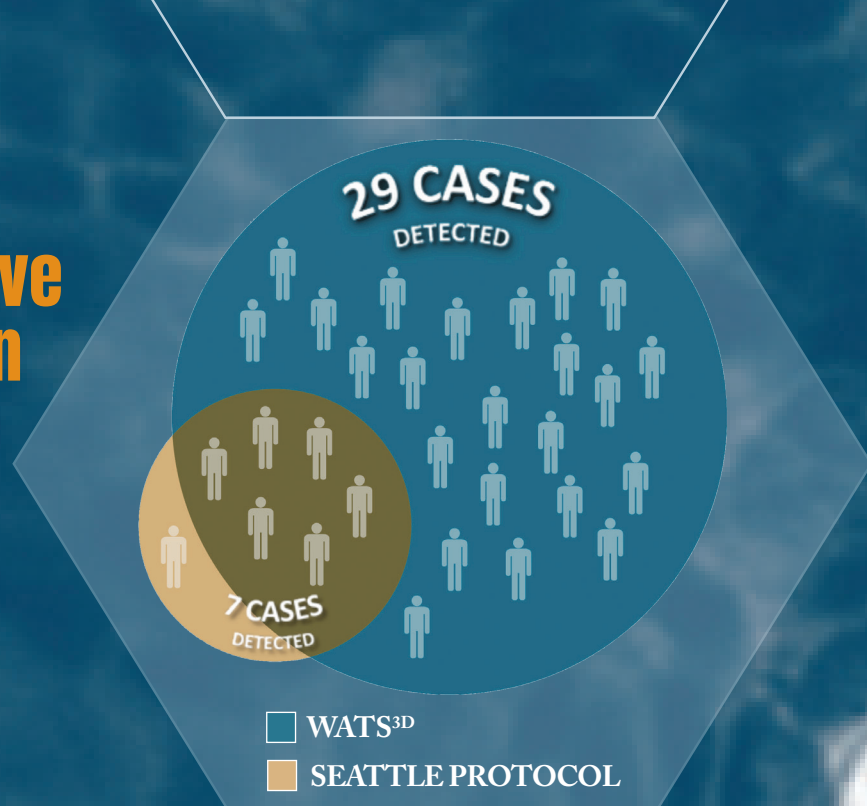
STUDY DESIGN

- 16 major academic GI centers participated
- Double-blind, randomized, crossover study
- 160 high-risk patients undergoing BE surveillance
- WATS³ᴰ and Seattle Protocol 4-quadrant FB every 1-2 cm

STUDY AUTHORS

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29 CASES DETECTED

7 CASES DETECTED

☐ WATS³ᴰ
☐ SEATTLE PROTOCOL

*Vennalaganti PR, Eisen G, Falk GW, et al. Increased Detection of Barrett's Esophagus-Associated Neoplasia Using Wide Area Transepithelial Sampling in Conjunction with 4-Quadrant Forceps Biopsies: Final Results from a Multi-Center, Prospective, Randomized Trial. Gastrointestinal Endoscopy. http://dx.doi.org/10.1016/j.gie.2017.07.039

WATS³ᴰ Included in the ASGE Standard of Practice Guidelines for the Screening for and Surveillance of Barrett's Esophagus

GUIDELINE CLINICAL QUESTION:

In patients with known or suspected BE, what is the role of WATS³ᴰ (Wide Area Transepithelial Sampling with computer-assisted 3-Dimensional analysis) in increasing the rate of dysplasia detection?

ASGE RECOMMENDATION:

In patients with known or suspected BE, the new guideline includes a recommendation for using WATS³ᴰ in addition to white light endoscopy (WLE) with Seattle protocol biopsy sampling compared to WLE with Seattle protocol biopsy sampling alone.
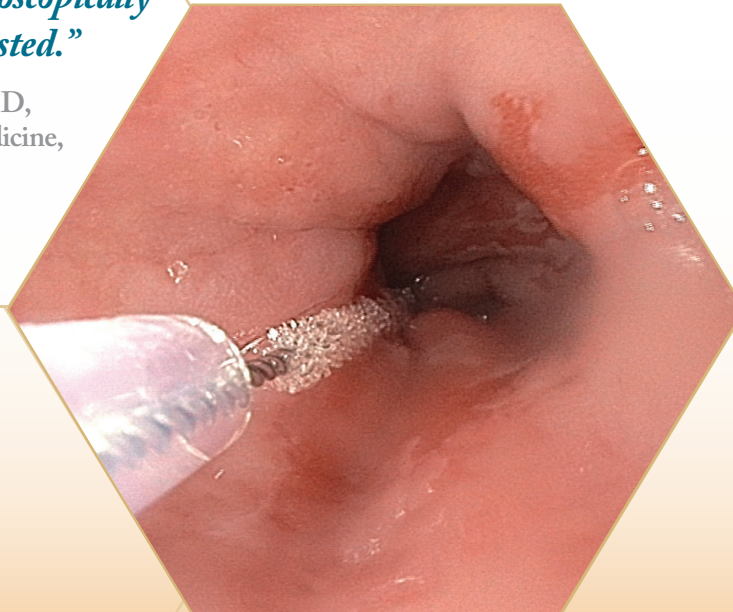
BREAKTHROUGH SAMPLING

Finally, you can address the sampling limitations of random forceps biopsy

- Barrett's esophagus (BE) and dysplasia are often missed with 4-quadrant biopsies

- Wide area sampled by WATS helps find abnormality located between forceps biopsy samples

- WATS wider area sample sharply increases routine detection of BE and dysplasia (see bar chart)

Forceps Biopsy
obtains focal samples.

WATS³D Biopsy
obtains a complete sample of a large surface area.
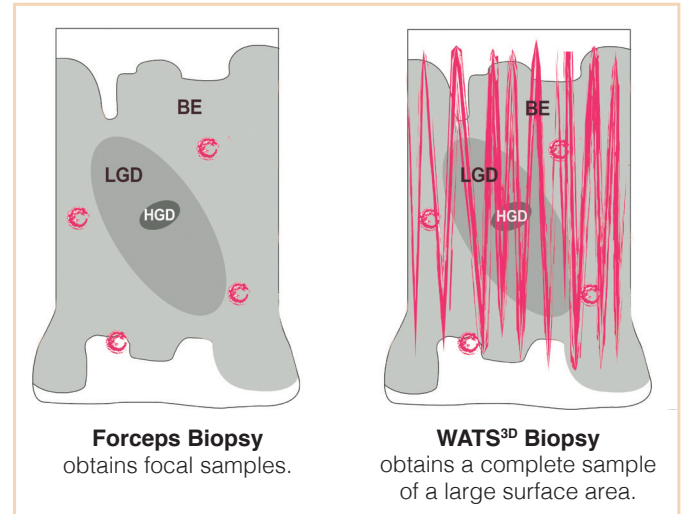
"At the current time, endoscopists rely solely on taking small random forceps biopsies, at 1–2 cm intervals, leaving more than 96% of the endoscopically suspect area completely untested."

— Prashanth R. Vennalaganti, MD,
University of Kansas, School of Medicine,
Kansas City, KS

BREAKTHROUGH ANALYSIS

3D imaging yields critical diagnostic information – including the *en face* view of the gland

- If standard tissue sectioning were applied to a WATS sample, critical diagnostic information would be destroyed

- Analogous to a CAT scan, WATS[3D] computer imaging synthesizes up to 50, 2D optical slices of each 3 micron focal plane into a single 3D image of the entire 150 micron thick specimen

- This computer synthesized WATS 3D image presents to the pathologist the in vivo, *en face* view of the gland — allowing for a definitive diagnosis of dysplasia in cases which may otherwise be reported as "indefinite"
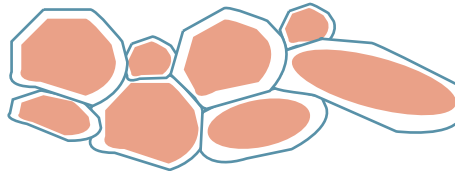
How capturing the *en face* view of the gland helps to eliminate "Indefinite for Dysplasia" Reports:

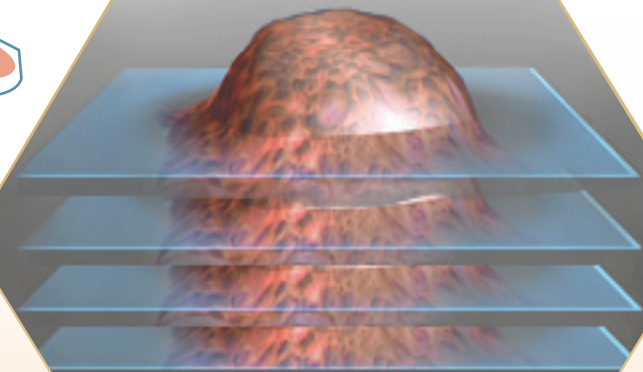A WATS[3D] sample is 50x thicker than a standard 3μ thick histopathology slide

150μ
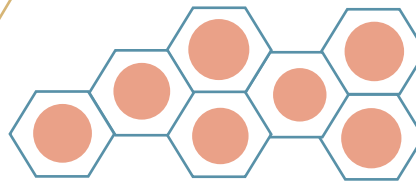
Non-dysplastic epithelium is characterized by a regular honeycomb pattern

Effacement of this honeycomb is a characteristic sign of dysplasia

WATS[3D] computer synthesis of 50, 2D "optical slices" forms an *in vivo* 3D image of the uncut glandular surface.

BREAKTHROUGH CONSISTENCY

## Computer assisted technology yields sharply higher inter-observer agreement among pathologists[1]

- WATS[3D] proprietary algorithm and neural network highlights the most suspicious areas on this computer synthesized image for consistent pathologist review

| Kappa values in the diagnosis of BE and dysplasia	
WATS[3D] Overall	.86
• HGD/EAC	.95
• IND/LGD	.74
• NDBE	.88
Standard Histopathology	.30

"WATS[3D] not only addresses the sampling error inherent in relying on random forceps biopsies, its three-dimensional computer assisted analysis of the tissue sample provides the GI pathologist with diagnostic information that is not typically available using standard tissue based histopathology."
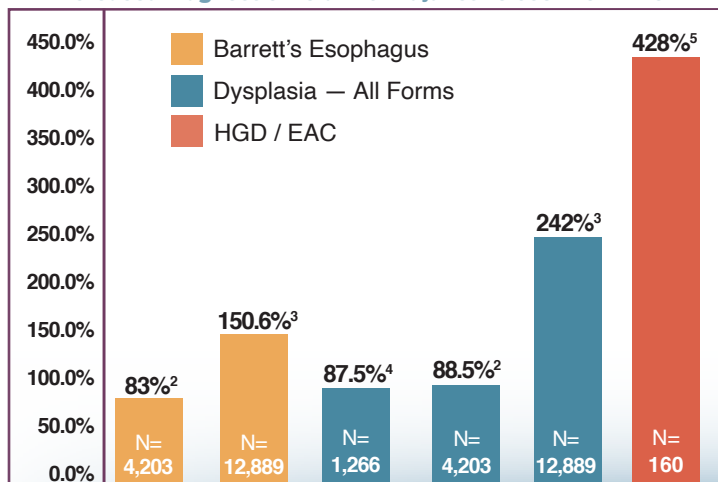
— Robert D. Odze, MD, FRCPC
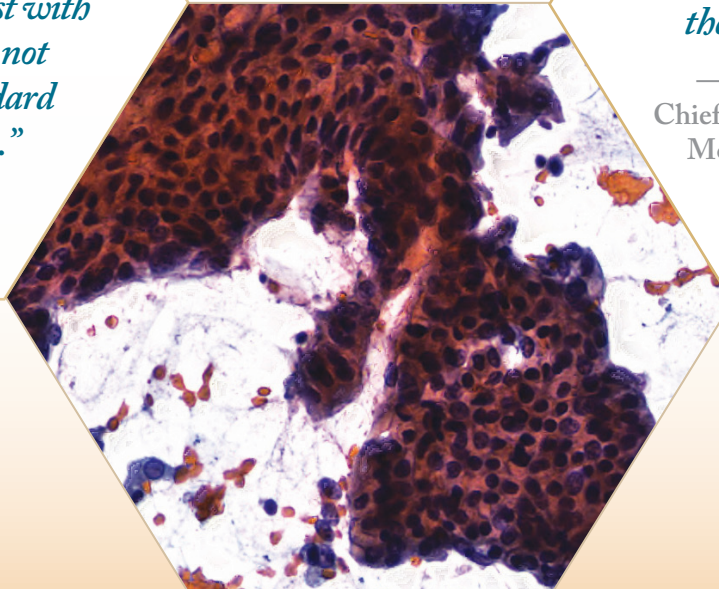
"These robust data demonstrate we have a tool that markedly improves our ability to detect dysplasia and cancer within Barrett's well beyond the error-prone Seattle protocol."

— Michael S. Smith, MD, MBA, Chief of Gastroenterology and Hepatology, Mount Sinai West and Mount Sinai St. Luke's Hospitals, NY
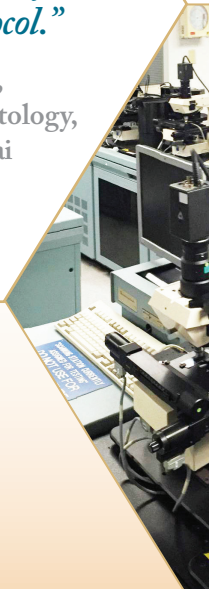
BREAKTHROUGH DATA

Increased Diagnostic Yield with Adjunctive Use of WATS[3D]**

	Barrett's Esophagus
	Dysplasia — All Forms
	HGD / EAC

Chart values: 83%[2] (N=4,203), 150.6%[3] (N=12,889), 87.5%[4] (N=1,266), 88.5%[2] (N=4,203), 242%[3] (N=12,889), 428%[5] (N=160)

**WATS as an adjunct to standard forceps biopsy compared with standard forceps biopsy alone

"I see no reason why every academic and community gastroenterologist should not be using this rapidly performed, easily implemented procedure today to improve the diagnosis of Barrett's esophagus and dysplasia, so patients can be directed to appropriate endoscopic surveillance or therapy to prevent esophageal cancer."

— Dr. Charles Lightdale, MD,
Columbia University Medical Center,
New York

Overcome Random Biopsy Sampling Error – Starting With Your Next EGD.

Please contact us today at 1-845-777-7000 or wats3d@cdxdiagnostics.com to learn how easy it is to let WATS[3D] help your next EGD be far more reliable.

WATS[3D]®

[1]Vennalaganti PR, Kanakandi VN, Gross SA, et al.
Inter-observer agreement among pathologists using wide-area transepithelial sampling with computer-assisted analysis in patients with Barrett's esophagus.Am J Gastroenterol. 2015;110(9):1257-1260

[2]Gross SA, Smith M, Ali R, Kaul V on behalf of US Collaborative WATS3D Study Group.
Increased detection of Barrett's esophagus and esophageal dysplasia using transepithelial brush biopsy with three dimensional computer-assisted tissue analysis: a prospective multi-site community-based study. United Eur Gastroenterol J. 2015;3(5S):A103.

[3]Ikonomi EP, Bhuta R, Iorio N, et al.
Transepithelial brush biopsies with computer-assisted 3-dimensional analysis markedly improve detection of Barrett's esophagus and dysplasia: interim analysis from a prospective multi-center community-based study. Am J Gastroenterol. 2015;110(Suppl 1):S728.

[4]Johansen JF, Frakes J, Eisen D, et al.
Computer-assisted analysis of abrasive transepithelial brush biopsies increases the effectiveness of esophageal screening: a multicenter prospective clinical trial by the EndoCDx Collaborative Group. Dig Dis Sci. 2011;56(3):767-772.

[5]Vennalaganti PR, Eisen G, Falk GW, et al.
Increased Detection of Barrett's Esophagus-Associated Neoplasia Using Wide Area Transepithelial Sampling in Conjunction with 4-Quadrant Forceps Biopsies: Final Results from a Multi-Center, Prospective, Randomized Trial.
Gastrointestinal Endoscopy.
http://dx.doi.org/10.1016/j.gie.2017.07.039

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