

vNOTES FACT SHEET

vNOTES (vaginal natural orifice transluminal endoscopic surgery) is an advanced minimally invasive gynecologic procedure using the vagina as a surgical access route. The vNOTES technique is most commonly used for hysterectomy procedures, as well as salpingectomy, oophorectomy, and cystectomy procedures.

- **WHAT IS vNOTES?**
 - vNOTES is the next advancement in minimally invasive gynecologic surgery.
 - vNOTES is performed by using the vagina as a surgical access route for the procedure, leaving the patient with no visible scarring.
- **PATIENT BENEFITS**

vNOTES has been shown to provide the following benefits compared to the laparoscopic approach:¹

 - Shorter hospital stay
 - No visible scars
 - Less postoperative pain
 - Faster recovery time
- **vNOTES PROCEDURES**
 - Hysterectomy
 - Salpingo-oophorectomy
 - Salpingectomy
 - Cystectomy
 - Oophorectomy
- **CONDITIONS TREATED BY vNOTES**
 - A vNOTES hysterectomy can treat the following conditions:
 - Abnormal uterine bleeding
 - Chronic pelvic pain
 - Fibroids
 - Prolapse of the uterus
 - vNOTES adnexal surgery can be indicated for the following:
 - Adnexal mass
 - Sterilization
 - Prophylactic ovarian cancer prevention
- **vNOTES TECHNIQUE**
 - vNOTES combines the benefits of the laparoscopic and vaginal approaches to gynecologic surgery using a vNOTES device known as the [GelPOINT® V-Path transvaginal access platform](#).
 - vNOTES is performed by using the vagina as a surgical access route. The vNOTES device is placed through the vagina into the pelvic cavity, giving access to the uterus, fallopian tubes and ovaries.
 - The abdomen is inflated with carbon dioxide gas to give the surgeon the space needed to see and operate. vNOTES enables the surgeon to operate at a lower carbon dioxide gas pressure.²
 - Research has shown that operating at a lower pressure is associated with reduced postoperative pain.³
 - A high-definition camera and specialized instruments are inserted through the vNOTES device, allowing surgeons to operate with the utmost precision and visualization. Once the surgery is completed, the vNOTES device is removed and the gas is evacuated.

¹ Baekelandt J. Hysterectomy by transvaginal natural orifice transluminal endoscopic surgery versus laparoscopy as a day-care procedure: a randomised controlled trial. *BJOG*. 2019 Jan;126(1):105-113

² Kaya C. et al. Conventional Laparoscopy or Vaginally Assisted Natural Orifice Transluminal Endoscopic Surgery for Adnexal Pathologies: A Paired Sample Cross- Sectional Study. *Journal of Investigative Surgery*.

³ Ali IS, Shah MF, Faraz A, Khan M. Effect of intra-abdominal pressure on post-laparoscopic cholecystectomy shoulder tip pain: A randomized control trial. *J Pak Med Assoc*. 2016;66(10):S45-S49.

- **SURGICAL SOCIETY RECOMMENDATIONS**

- The American College of Obstetricians and Gynecologists (ACOG) and the American Association of Gynecologic Laparoscopists (AAGL) have recommended vaginal hysterectomy, whenever feasible, as the approach of choice.^{4,5}

- **RESEARCH FINDINGS**

- The HALON study⁶ was conducted from December 2015 to June 2017. The study was a single-center, non-inferiority, randomized, controlled trial comparing vNOTES hysterectomy to laparoscopic hysterectomy as an outpatient procedure at the Department of Obstetrics and Gynecology, Imelda Hospital, in Bonheiden, Belgium.
- The results of the study demonstrated the following benefits to the vNOTES approach compared to the traditional laparoscopic approach:
 - Reduced operating time
 - Reduced hospital stay
 - Reduced pain
 - Improved recovery time
 - Reduced analgesics use
- The HALON study was published in January 2019 in [BJOG: An International Journal of Obstetrics and Gynaecology](#).

- **SURGERY STATISTICS**

Hysterectomy

- In the U.S., about 500,000 hysterectomies are performed each year.^{7,8}
- The average age a woman receives a hysterectomy is 40-45 years old.

Adnexal Surgery

- vNOTES provides better access to the fallopian tubes and ovaries compared to vaginal surgery.⁹
 - As recent data points to the fallopian tube as the origin of most high-grade serous ovarian cancers, removal of the fallopian tubes can significantly reduce the risk of ovarian cancer.^{10,11}
 - Reports of successful adnexa removal by the traditional vaginal approach vary greatly, with failure rates ranging from 22 to 36%.^{12,13}
 - Compared to the traditional vaginal approach, vNOTES may facilitate the successful removal of the fallopian tubes due to the benefits of improved access and visualization.

For More Information: (Add Contact Name, Email, Phone)

⁴ Choosing the route of hysterectomy for benign disease. Committee Opinion No.701. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2017;129:e155-9.

⁵ AAGL Position Statement: Route of Hysterectomy to Treat Benign Uterine Disease. *JMIG* 2011 Jan;18(1):P1-3.

⁶ Baekelandt J. Hysterectomy by transvaginal natural orifice transluminal endoscopic surgery versus laparoscopy as a day-care procedure: a randomised controlled trial. *BJOG*. 2019 Jan;126(1):105-113

⁷ Cohen SL, Ajao MO, Clark NV, Vitonis AF, Einarsson JI. Outpatient hysterectomy volume in the United States. *Obstet Gynecol*. 2017;130:130-7

⁸ Einarsson J. Are hysterectomy volumes in the US really falling? Contemporary OB/GYN website. Sept 1, 2017. Accessed July 9, 2020.

<https://www.contemporaryobgyn.net/view/are-hysterectomy-volumes-us-really-falling>

⁹ Baekelandt J, et al. GelPOINT (Applied Medical) is a Suitable Port for Transvaginal NOTES Procedures. *Journal of Gynecologic Surgery* 2016; 32(5): 257-262.

¹⁰ Falconer H, Yin L, Grönberg H, Altman D. Ovarian cancer risk after salpingectomy: a nationwide population-based study. *J Natl Cancer Inst*. 2015;107(2):dju410

¹¹ Madsen C, Baandrup L, Dehlendorff C, Kjaer SK. Tubal ligation and salpingectomy and the risk of epithelial ovarian cancer and borderline ovarian tumors: a nationwide case-control study. *Acta Obstet Gynecol Scand*. 2015;94(1):86-94.

¹² Robert M, Cenaiko D, Sepandi J. et al. Success and Complications of Salpingectomy at the Time of Vaginal Hysterectomy. *J Minim Invasive Gynecol*. 2015 Jul-Aug;22(5):864-9

¹³ Mothes AR, Schlachetzki A, Nicolaus K. et al. LAVH superior to TVH when concomitant salpingo-oophorectomy is intended in prolapse hysterectomy: a comparative cohort study. *Arch Gynecol Obstet*. 2018; 298: 1131–1137