



## **CASE PRESENTATION**

**On 26<sup>th</sup> February 2024, AV a 34 y/o female (married from 5 years) homemaker came to the clinic to report issues with conceiving. She has a previous history of missed abortion. Her husband is an investment banker.**

# PATIENT DEMOGRAPHICS AND SUBJECTIVE DATA

- **Name:** AV
- **Age:** 34 years
- **Gender:** Female
- **Presenting Complaint:** Desires to conceive |

# PATIENT SUBJECTIVE DATA (Cont'd.)

<b>Past Medical History</b>	<ul style="list-style-type: none"><li>• Frequent UTI</li><li>• Weight gain – 5kgs</li><li>• Hair fall and dryness of skin</li><li>• Constipation off and on</li><li>• Jan 2023 – Day 15 to Day 25 – Had nausea</li><li>• Hepatitis, chickenpox in childhood</li></ul>
<b>Vaccination History</b>	<ul style="list-style-type: none"><li>• No HPV Vaccine taken</li></ul>
<b>Gynecologic History</b>	<ul style="list-style-type: none"><li>• <b>1<sup>st</sup> missed abortion</b> (April 2022) – Sac not formed properly and POC not sent for histopathology/ genetic evaluation</li><li>• <b>Menarche:</b> 12 – 13 years</li><li>• <b>PrMh:</b> 3/24 days – regular flow, lesser flow over the period of years, takes painkillers</li><li>• <b>LMP:</b> 20 February 2024, Previous - 29 Jan 2024, 5 Jan 2024, 12 December 2023</li></ul>
<b>Family History</b>	<ul style="list-style-type: none"><li>• Hypertension - Grandparents (Paternal)</li><li>• No history of infertility</li></ul>
<b>Social History</b>	<ul style="list-style-type: none"><li>• Occasional Smoking</li></ul>

# PATIENT'S OBJECTIVE DATA

## Vitals

- P: 84 BPM
- Weight: 53 kg
- BP: 120/80 mm Hg

## Physical Examination

- No expressive galactorrhea
- P/S: White, sticky, Cx no erosion
- P/V: Uterus anteverted, Fornices appear free

Husband reviewed – Viscosity Increased

# PATIENT'S PREVIOUS LAB REPORTS

## Past Specialized Diagnostic Tests:

Date	Test	Result	Interpretation
30 January 2024	Calcium	9.10	Normal
	FSH	9.17	In Follicular Phase
	LH	3.74	In Follicular Phase
	Fasting Glucose	95	Normal
	Fasting Insulin	4.57	Normal
	Free T4	0.82	Normal
	TSH	1.687	Normal
	<b>Vit D</b>	<b>5.16</b>	<b>Deficiency of Vit D</b>
	<b>Testosterone</b>	<b>9.43</b>	<b>Decreased</b>
	<b>Vit B12</b>	<b>116</b>	<b>Decreased</b>

## PATIENT'S PREVIOUS LAB REPORTS (Cont'd.)

Date	Test	Result	Interpretation
1 February 2024	Anti-Cardiolipin IgG	2.4	Negative for SLE
	Anti-Cardiolipin IgM	1.6	Negative for SLE
8 February 2024	CBC	-	Normal
	Creatinine	0.80	Normal
	HbA1c	5.1%	Normal
	Urine Routine:	-	Normal Physical and Biochemical Examination
	Urinary Pus Cells	2-4/hpf	Normal
	Urinary Epithelial Cells	5 – 7/hpf	Normal
	Urinary RBCs	Abs	Normal
	Urinary Casts/Crystals	Absent	Normal
	<b>Urinary Yeast</b>	<b>+</b>	<b>UTI</b>

## PATIENT'S PREVIOUS USG REPORTS (Cont'd.)

Date	Examination	Impression
3 February 2024	USG Whole Abdomen (Transabdominal and Transvaginal)	<ul style="list-style-type: none"><li>• <b>Small Sized Left Ovary</b></li><li>• <b>Bilateral Ovaries show less number of follicles within.</b></li></ul>

# DOCTOR'S ASSESSMENT AND PLAN

## Provisional Diagnosis

- ? Secondary Infertility

## Treatment Plan

- Continue D Rise Bar (once a week)
- Vit B12 (once a day)
- Cap Doxy (Doxycycline) – BD – 6 days
- Clingen Forte (Clindamycin, Clotrimazole, Tinidazole) – Vaginally – OID HS – 10 days
- T. Zocon (Fluconazole) – 150 mg – 1/week for 5 weeks
- C. Omez (Omeprazole) – 20 mg BD – 10 days

## Advice

- Test for AMH, Anti TPO, CRP, ESR, Ferritin
- HSG, Cytopathology

# PATIENT'S OBTAINED LAB REPORTS

Date	Test	Normal Range	Obtained Value	Interpretation
27 February 2024	<b>AMH</b>	<b>0.576 – 8.13</b>	<b>0.293</b>	<b>Decreased AMH</b>
	Anti TPO	0 – 34	15.71	Normal
	<b>CRP</b>	<b>&lt;5</b>	<b>25.42</b>	<b>Increased</b>
	ESR	0 – 20	<b>20</b>	Normal
	Ferritin	4.63 – 204	69.87	Normal

Date	Examination	Impression
28 February 2024	HSG	Normal
29 February 2024	Cytopathology	Normal – Negative for intraepithelial lesion/malignancy

**AV CAME FOR A FOLLOW UP ON 9<sup>TH</sup>  
MARCH 2024**

# DOCTOR'S ASSESSMENT AND PLAN

LMP: 20 February 2024 (Day 20)

## Advised Tests

- Histopathology (Done on 22nd February 2024)
- Endometrial Biopsy (Sent on 11 March)

## Advised Treatments

- T. Azithral (Azithromycin) 500 mg – BD
- T. Chymoral Forte (Trypsin and Chymotrypsin) – BD
- T. Omez (Omeprazole) 20 mg – BD

# PATIENT'S OBTAINED USG REPORTS

Date	Examination	Impression
11 March 2024	Digital Histopathology Report	<ul style="list-style-type: none"><li>Endometrium in mid secretory phase (consistent with 8<sup>th</sup> post ovulatory day in a 28 days cycle)</li></ul>
22 March 2024	USG of Both Breasts	<ul style="list-style-type: none"><li><b>Tiny cyst noted in the right breast.</b></li><li><b>Rest Normal.</b></li></ul>

# FOLLICULAR STUDY

Date	Day	Right Ovary	Left Ovary	Endometrium	Fluid in POD
22/03/2024	9th	Few small follicles (6-7mm)	-	4.3mm	No
23/3/2024	10th	Small follicles (7-8mm)	-	5.3 mm	-
26/3 2024	13th	12 x 9mm Sized... Cyst	-	8.9mm	Mild FF ..in 4th+POD
27/3/2024	14th	13 x 8mm Sized ...Cyst	-	8.9 mm	-

**AV CAME FOR A FOLLOW UP ON 1<sup>ST</sup>  
APRIL 2024**

# DOCTOR'S ASSESSMENT AND PLAN

## General Examination

- LMP: 14 March 2024
- Weight: 53 kg
- Pulse: 98 bpm

## Advised Tests

- Repeat AMH after Ovares tablet

## Advised Treatments

- **C. Primosa Boost (EPO, Tocotrienols, Vit B6) – OD x 3 months**
- **C. Evion Forte** (Fish Oil with Vitamins and Lycopene) – OD x 3 weeks
- **UNS D3 (Vit D3) – Once a week for 8 weeks**
- **T. Fertilix Ova** (Vitex Agnus (Chaste Berry Extract), Co-Enzyme Q10, Black Cohosh Extract, S-Acetyl Glutathione, Vitamin E 50% (Tocotrienols), Zinc, Cholecalciferol)– OD x 3 months
- **T. Pyridostigmine** - 60 mg twice a day to be continued
- Gestoden gel 8 % started from day 14 of LMP for luteal phase support and maintenance of pregnancy till further orders

# PATIENT'S OBTAINED USG REPORTS- PREGNANCY CONFIRMED

Date	Test	Interpretation
8 June 2024	USG Obstetric (Transabdominal and Transvaginal)	<ul style="list-style-type: none"><li>• <b>Single Intrauterine Gestational Sac noted of 5 Weeks 5 Days.</b></li><li>• Single Yolk Sac Noted Within The Gestational Sac In The Present Scan.</li><li>• No E/O Fetal Pole Noted Within The Gestational Sac In The Present Scan</li></ul>
27 June 2024	USG Obstetric (Transabdominal and Transvaginal)	<ul style="list-style-type: none"><li>• <b>Single Live Intrauterine Gestation of 8 weeks, 0 days.</b></li><li>• EDD is assigned according to LMP – 9/2/2025</li></ul>

# **ADVISED TREATMENTS AFTER THE PREGNANCY WAS CONFIRMED**

- Folic acid
- Calcimax forte (10 weeks onwards)
- Cap Pregnacare 1 daily 10 weeks onward
- UNS D3 once a month after 10 weeks

# PATIENT'S OBTAINED LAB REPORTS- AROUND 10 WEEKS OF PREGNANCY

Test	Interpretation
CBC Hemogram	Normal
<b>Blood group (ABO typing)</b>	O
<b>RhD factor (Rh typing)</b>	POSITIVE
<b>HBsAg Screening</b>	Non-Reactive,0.00
<b>Anti HCV-Ab to Hepatitic C Virus</b>	Non-Reactive,0.12
<b>HIV-DUO (IV th Generation test)</b>	Non-Reactive,0.14
<b>RPR</b>	Non-Reactive
<b>Antenatal Profile - I</b> <b>Routine Examination Urine</b>	Normal
Glucose post prandial	Pending
TSH(Ultrasensitive)	Pending

# **VITAMIN D ROLE IN INFERTILITY AND PREGNANCY**

# VITAMIN D

## Sources

- Sun exposure and supplements are primary sources

## Insulin Sensitivity

- May improve insulin sensitivity

## Inflammation

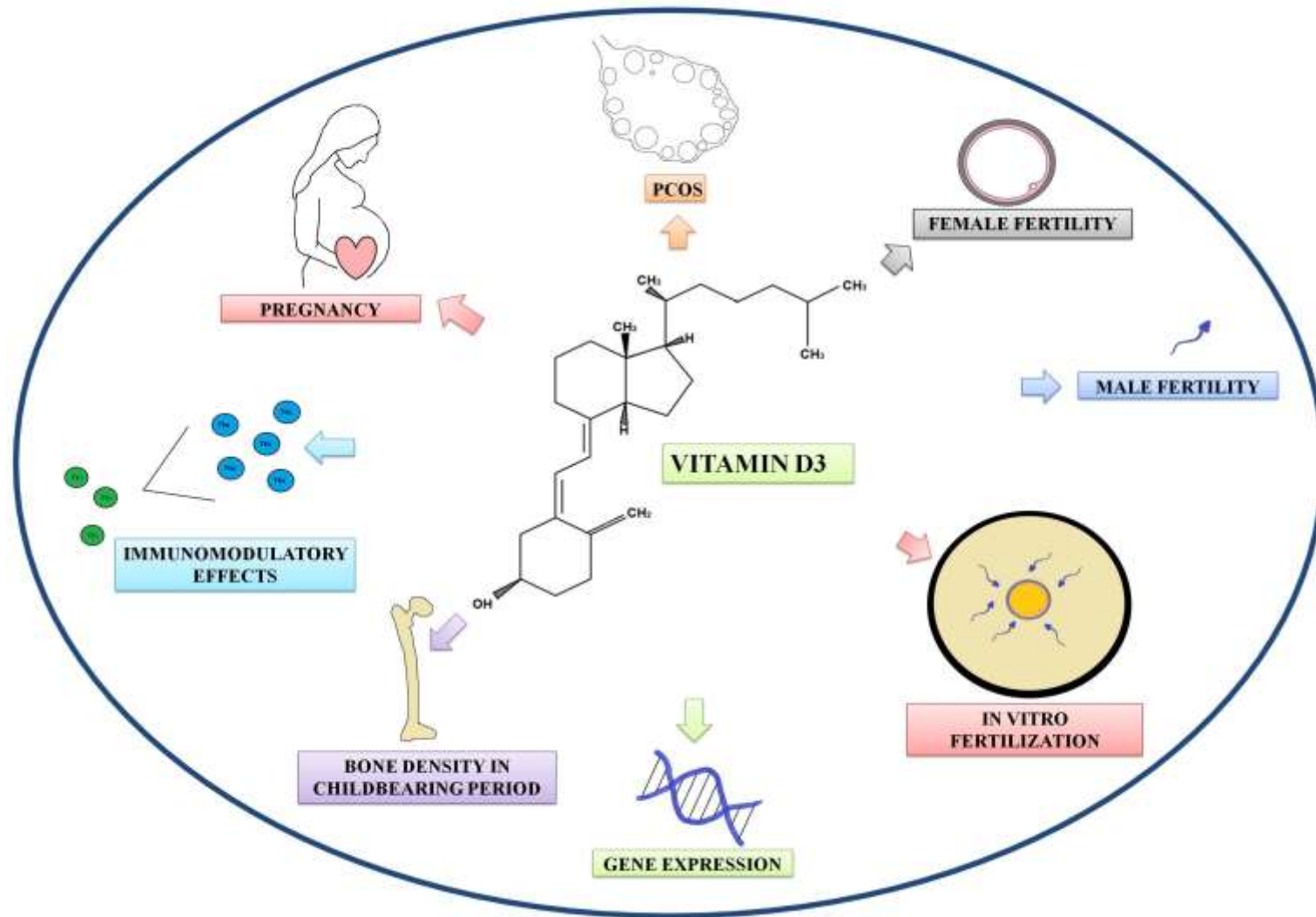
- Has potential anti-inflammatory effects

## Evidence

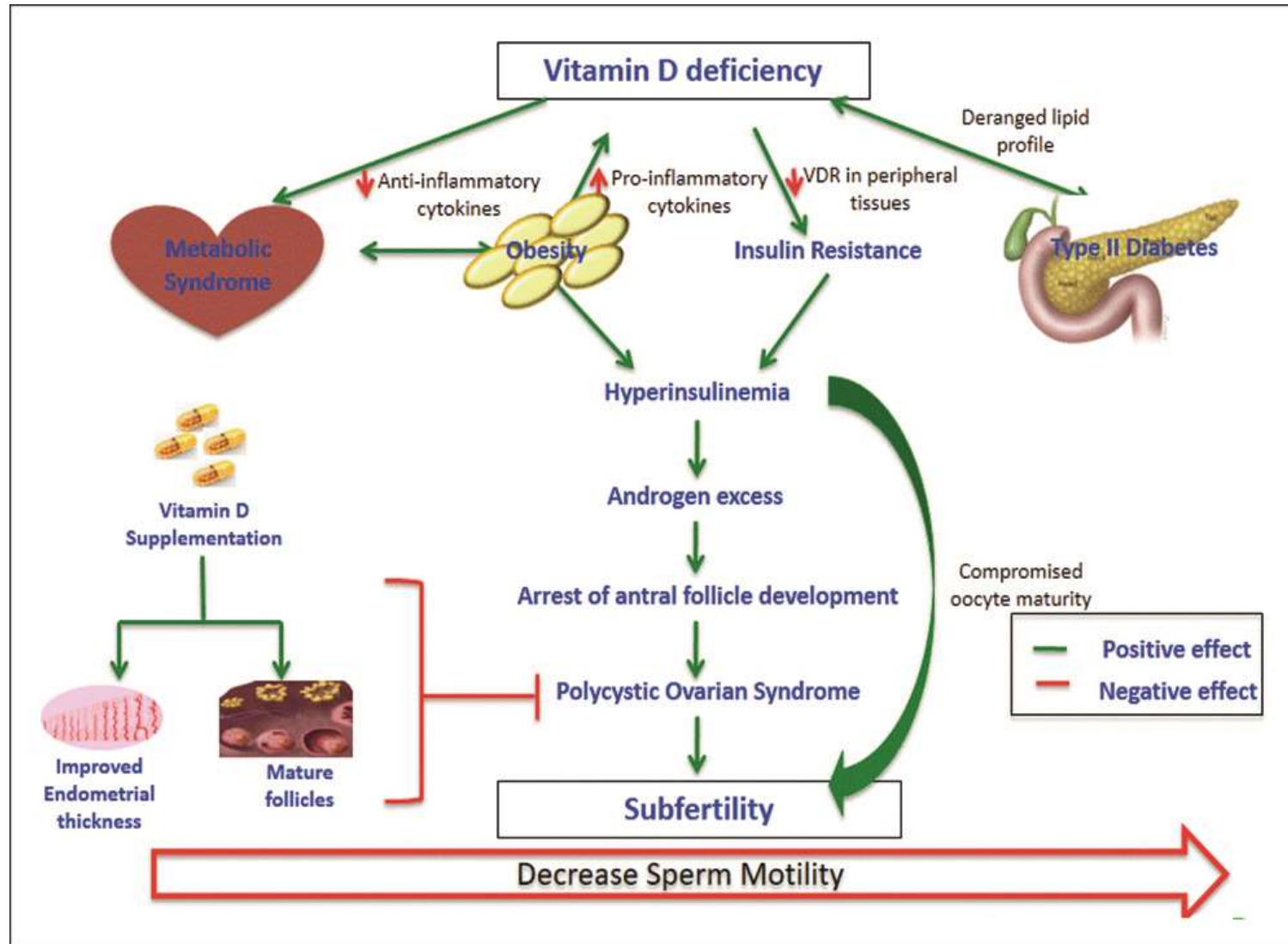
- Clinical studies support its role in cardiometabolic health

**May help improve pregnancy outcomes in PCOS, age related infertility, poor ovarian reserve and IUI/IVF**

# VITAMIN D3- A CRUCIAL PLAYER IN REPRODUCTIVE HEALTH



# IMPACT OF VITAMIN D ON FERTILITY



# **VITAMIN D3 SUPPLEMENTATION BENEFITS IN INFERTILITY PATIENTS**

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Increases survival of **preantral follicles** and enhances **growth of antral follicles**<sup>1</sup>

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Improves **oocyte quality, ovulation rate, fertilization rate** and **number of high-quality embryos**<sup>2-4</sup>

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Improves **endometrial thickness**<sup>5</sup>

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Sufficient Vitamin D3 levels Improves the **success rate** of IVF treatment by **4-fold**<sup>6</sup>

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**Every nmol/L increase** in vitamin D content of follicular fluid **increases** probability of **clinical pregnancy by 2.4%**<sup>1</sup>

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Increases **clinical pregnancy rate by 1.7-fold** compared with the control group<sup>\*7</sup>

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Sufficient vitamin D3 levels **increases live birth rates**<sup>8</sup>

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**Enhances pregnancy and ovulation rates**, and reduces **early miscarriage rates** in women with PCOS<sup>3</sup>

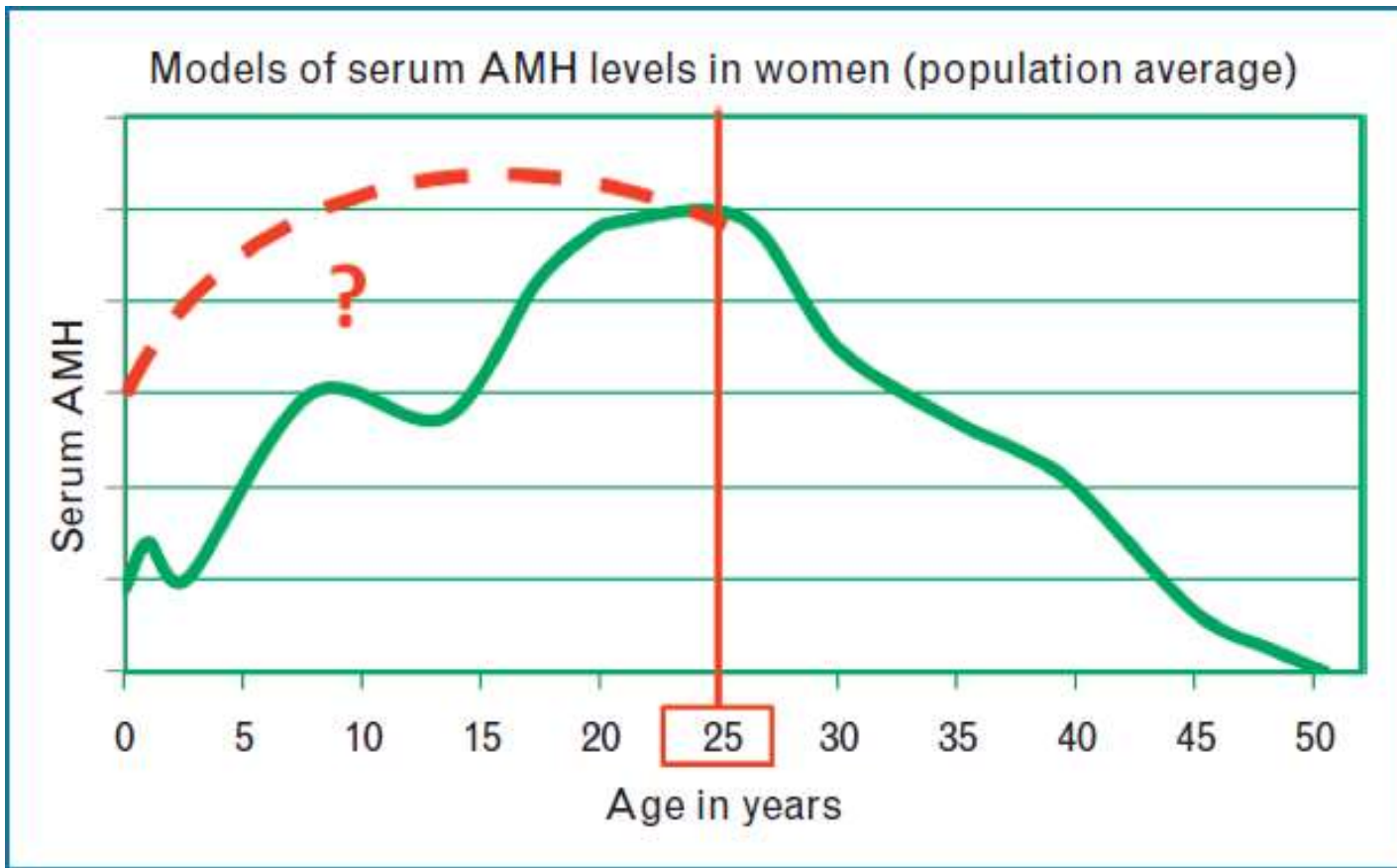
\*Control group without Vitamin D3 supplementation.

# VITAMIN D3 SUPPLEMENTATION BENEFITS IN PREGNANCY

Reduces risk of both maternal and fetal risk for complications and adverse events<sup>1-3</sup>

- Low birth weight
- Pre-eclampsia, GDM and neonatal mortality
- Gestational complications
- Recurrent spontaneous abortion
- Bacterial vaginosis

Protects skeletal health of pregnant women<sup>1</sup>



- AMH levels decline after 25 years of age followed by an almost linear decline<sup>1</sup>
- AMH level has been found to be declined among smokers<sup>2</sup>
- A history of heavy smoking may indicate increased risk of diminished ovarian reserve<sup>2</sup>

**Thank You**