



Working Group on
Hyperglycaemia in Pregnancy (HIP)

Hyperglycaemia in Pregnancy (HIP)

The FIGO approach

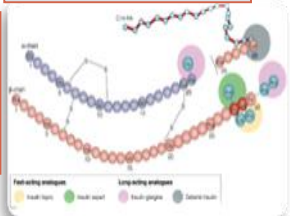
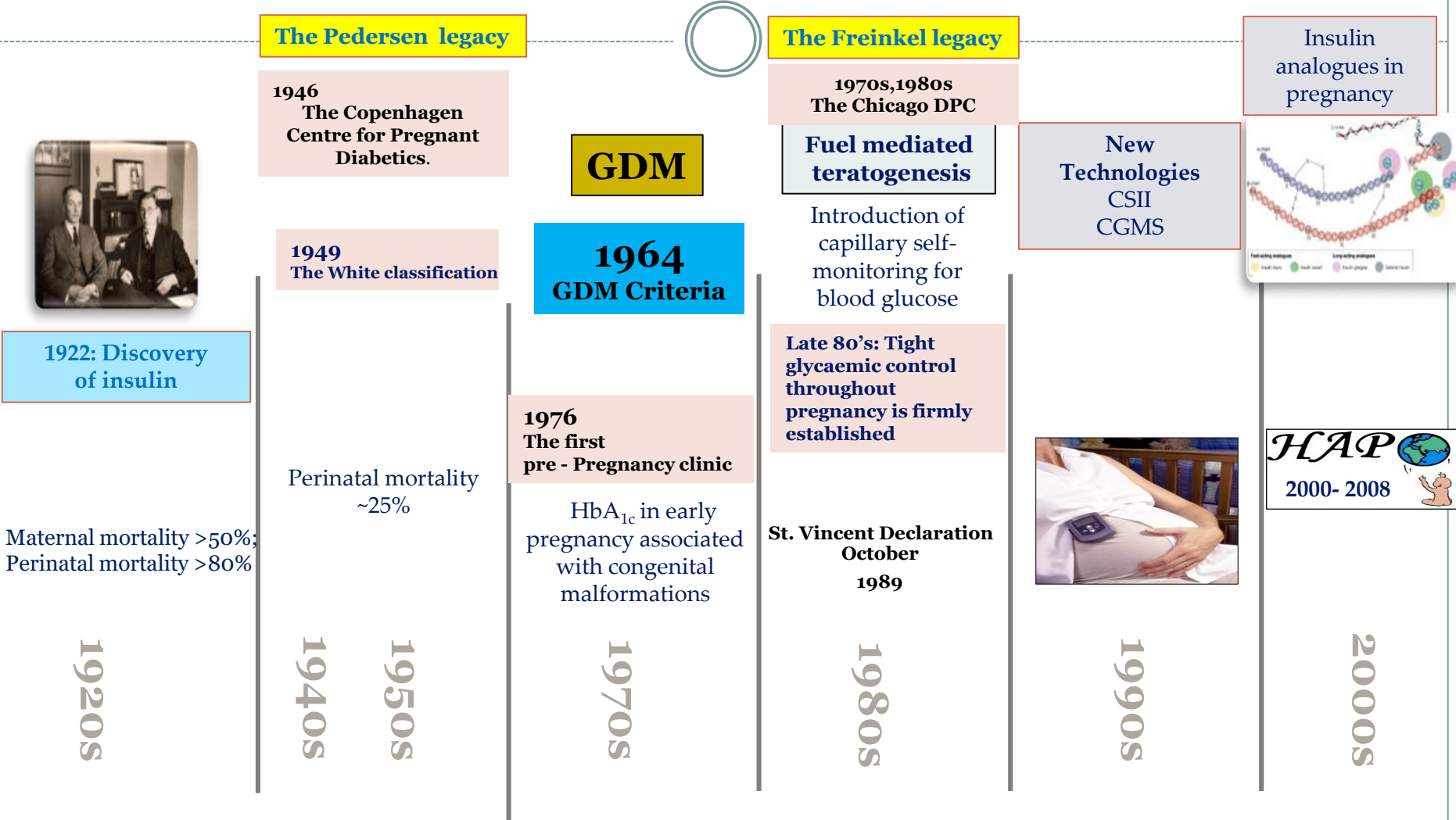
Prof. Moshe Hod
Rabin Medical Center
Israel

President, European Association of Perinatal Medicine
Chairman, FIGO Hyperglycemia in Prenatal Working Group



FIGO

The evolution of Diabetes and Pregnancy



HIP is a major global health problem



Hyperglycemia is one of the **most common medical conditions** women encounter during pregnancy



1 in 6 live births occur to women with some form of hyperglycemia

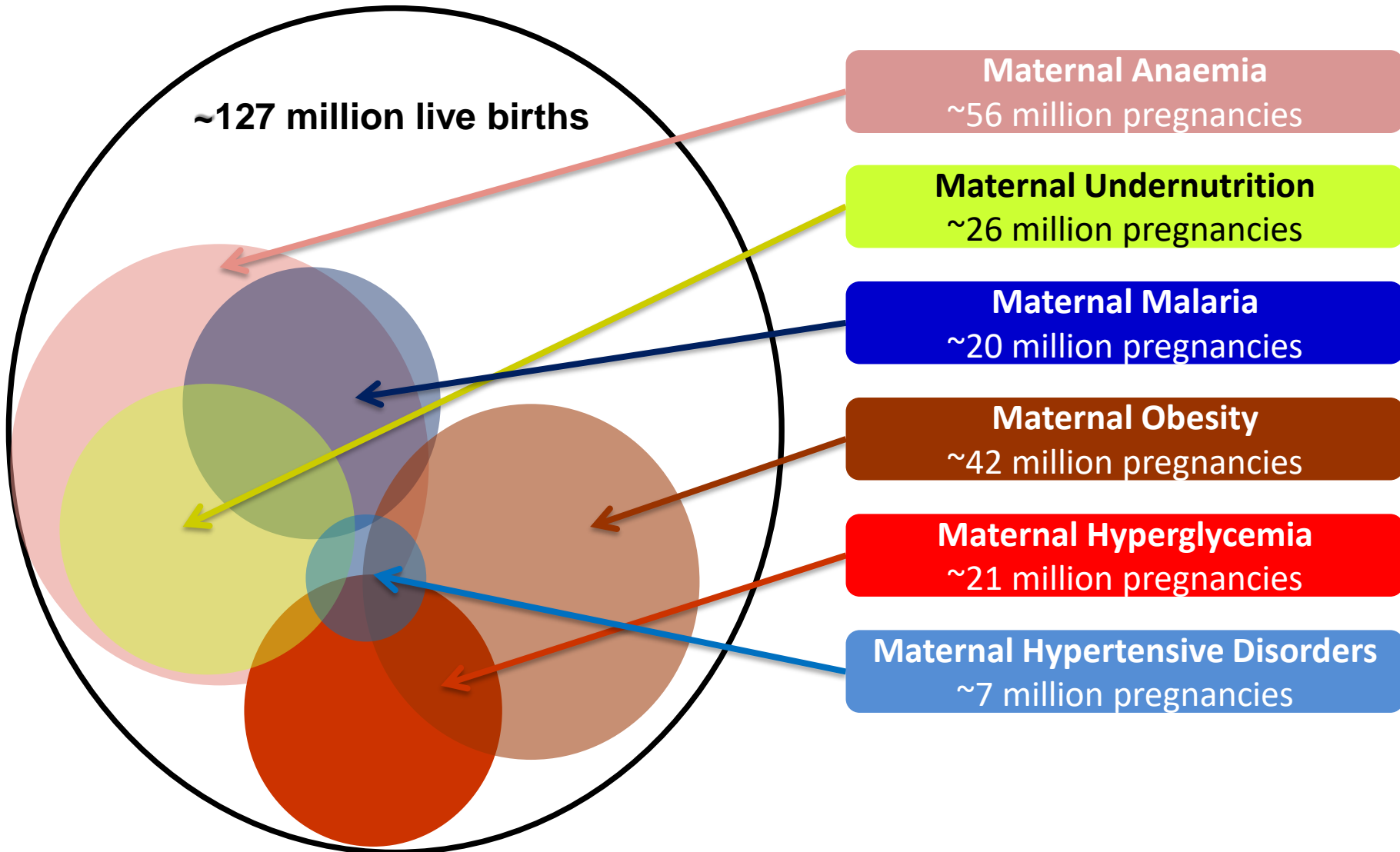
84% of which are due to GDM

HYPERGLYCEMIA/GDM IS ASSOCIATED WITH:

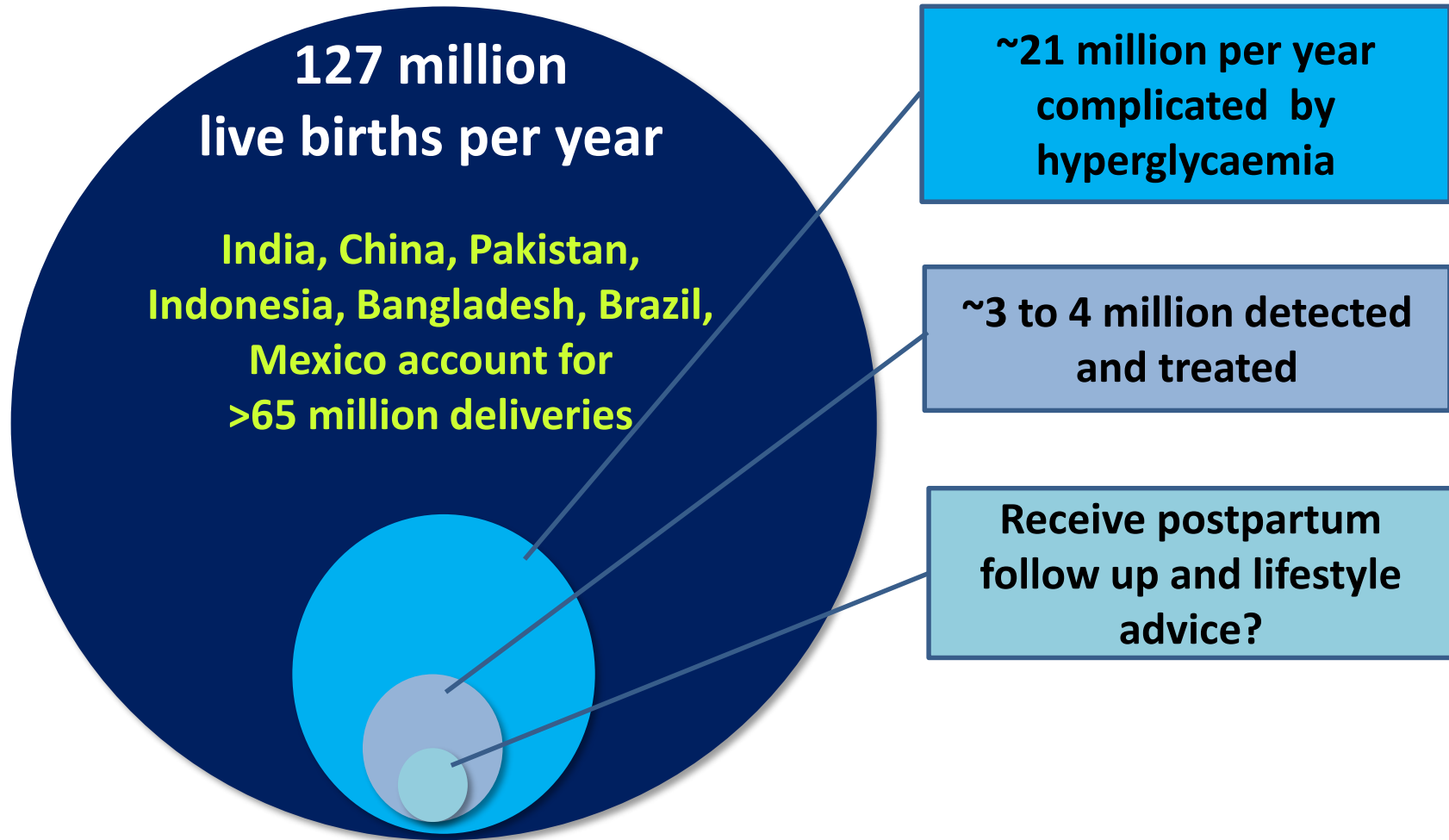
- Leading causes of **maternal mortality**
- Higher incidence of **maternal morbidity**
- Higher incidence of **perinatal and neonatal morbidity**
- **Later long term consequences** for both mother and child



Contributors for Maternal Morbidity and Foetal Programming



The HIP Challenge





HIP is a major global health problem

"...Facing a "Slow-Motion Disaster" UN Meeting on Non Communicable Diseases



The NEW ENGLAND
JOURNAL of MEDICINE

**Margaret Chan, Director-General,
World Health Organization (WHO), Sept. 2011**

- *There is an increasing global crisis in NCD*
- *NCD are associated with mortality, morbidity, and long-term disability*
- *Two of three deaths globally are attributable NCDs*



**Non Communicable Diseases are
Programmed & Imprinted
during Pregnancy**

***Diagnosis and management may help turn the tide of the
Diabetes - NCD pandemic***



World Health Day 2016

6 April, 2016 / Geneva

HIP is a major global health problem

WHO calls for global action to halt rise in and improve care for people with diabetes

First WHO Global report on diabetes: **422 million (8.5%)** adults live with diabetes, mainly in developing countries
1980 - 108 million (4.7%)

Maternal Fetal Medicine

**Non Communicable Diseases are
Programmed & Imprinted
during Pregnancy**

The Vicious Cycle - NCD Epidemic

Obesity, Diabetes, Hypertension, Metabolic Syndrome & Pregnancy

Predictable & Preventable ?

2nd and 3rd Trimester

Pregnancy Induced Complications
(GDM, PET, PTL, IUGR, IUFD)

Abnormal Intrauterine
Metabolic Environment

Fuel Mediated Teratogenesis

Fetal
Programming & Imprinting

Diagnosis, Management
& Follow up

Delivery

Post-Partum
Management

Offspring
Health

Maternal
Health

Maternal Health

1st Trimester

Prediction and Prevention

Prevention of Pregnancy
Induced Complications
(GDM/PET/IPL/IUGR/IUFD)

Pre-Conception Management

NCD's
(DM, Obesity, HT, CVD...)

M

F

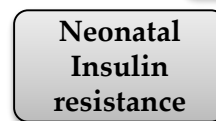
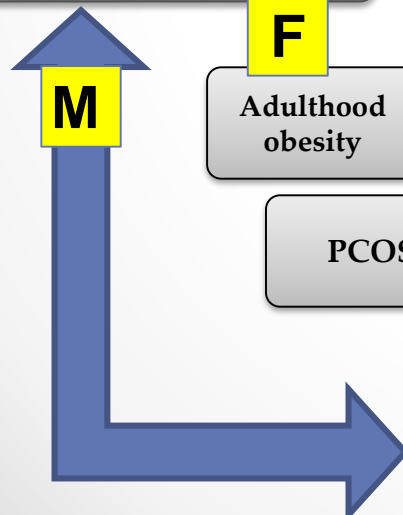
Adulthood
obesity

PCOS

Early
metabolic
syndrome

Childhood
obesity

Neonatal
Insulin
resistance



Prediction of Type 2 Diabetes post GDM

Maternal

Oct. 1, 2015

Acta Diabetol
DOI 10.1007/s00592-015-0814-0



ORIGINAL ARTICLE

Development of a simple tool to predict the risk of postpartum diabetes in women with gestational diabetes mellitus

M. Köhler^{1,2} · A. G. Ziegler^{1,2,3} · A. Beyerlein^{1,2}

Risk Score

- BMI in early pregnancy (+X5)
- Insulin treatment (+132)
- Family history (+44)
- Lactation (-35)

Methods Data from 257 GDM women who were prospectively followed for diabetes outcome over 20 years of follow-up were used to develop and validate the risk score. Participants were divided into training and test sets.

Table 2 Predicted risk and observed rates of diabetes at 5, 10, and 15 years postpartum by risk category according to risk score cut-off values

Risk category	Score interval	Predicted risk (95 % CI) in the training set			Observed rates (95 % CI) in the test set				
		n	5 years	10 years	15 years	n	5 years	10 years	15 years
Low	<140	83	13 % (7–19 %)	21 % (13–29 %)	26 % (16–35 %)	39	11 % (0–21 %)	15 % (2–27 %)	19 % (4–32 %)
Medium	140–220	35	31 % (22–39 %)	47 % (36–56 %)	54 % (42–63 %)	21	29 % (6–47 %)	44 % (14–64 %)	53 % (18–74 %)
High	220–300	37	60 % (47–70 %)	79 % (66–86 %)	85 % (73–92 %)	20	64 % (30–81 %)	71 % (36–87 %)	89 % (41–98 %)
Very high	>300	16	90 % (72–96 %)	98 % (88–100 %)	99 % (92–100 %)	5	80 % (0–97 %)	– ^a	– ^a

CI confidence interval

St. Vincent Declaration

St. Vincent (Italy), 10-12 October 1989

Organized by **WHO** and **IDF**

FIGO
EAPM
EBCOG
SMFM

"...Achieve a pregnancy outcome in the diabetic woman that approximates that of the non-diabetic woman – 10 years....."

Was it achieved in 28 years ...???

Fetal

- Congenital anomalies
- Spontaneous abortions
- Intrauterine growth restriction (IUGR)
- Perinatal mortality (PNM)
-
-

Maternal

- Abortions
- Hypoglycemia
- DKA
- Pre-GDM

Can we do better ...???



FIGO - The **HIP** Challenge

**India, China, Pakistan,
Indonesia, Bangladesh,
Brazil, Mexico**
>65 million deliveries

**127 million
live births/year**

**~21 million /year
complicated by
hyperglycaemia**

**~3 to 4 million detected
and treated**

**Receive Post partum follow
up and lifestyle advice ?**



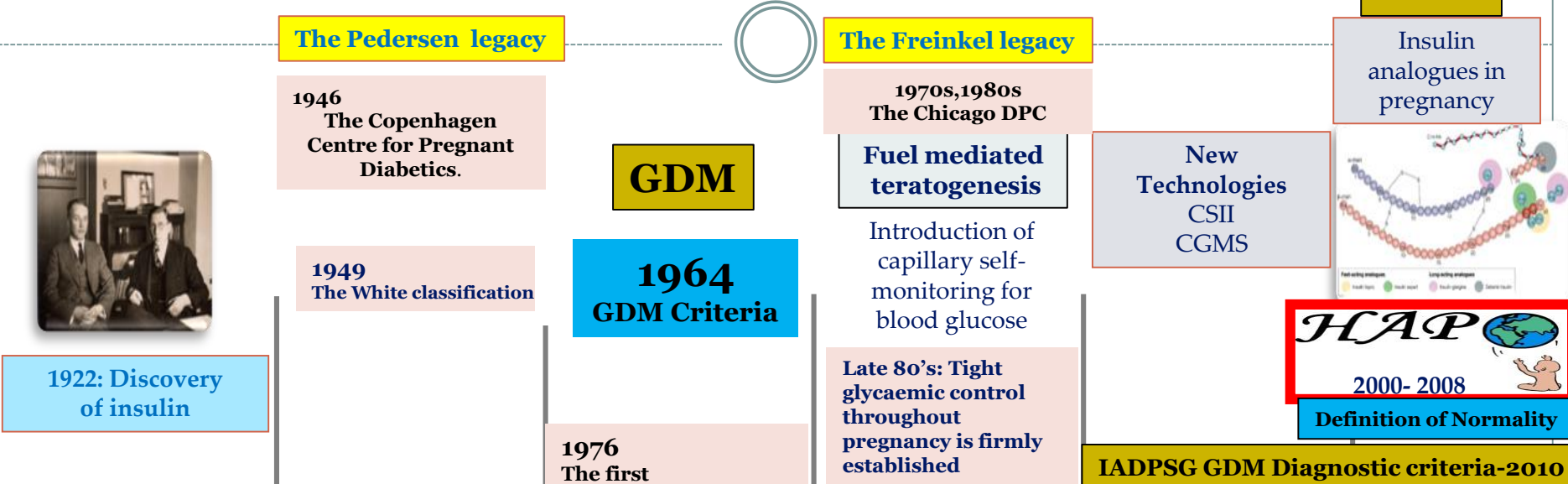
The Controversy - Diagnosis

- ❖ **Universal testing vs Risk Assessment**
- ❖ **A one-step procedure vs Two Steps**
- ❖ **Cut-off values**



FIGO

The evolution of Diabetes and Pregnancy



The FIGO HIP Initiative

2013- 2015 1st Phase

2016- 2018 2nd Phase

FIGO GDM Diagnostic criteria - 2015



Hyperglycemia and **A**dverse **P**regnancy **O**utcome

NIH Multicentral Multinational Study

- ~25,000+ **NON-DIABETIC GRAVIDAS**
- 15 **CENTERS**
- 9 **DIFFERENT COUNTRIES**
- **BLINDED 75 GM OGTT 24-32 WEEKS**
- **EXCLUDED IF FBS >105 MG/DL, OR 2-HR >200 MG/DL**
- **BUDGET – 20,000,000 US\$**



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MAY 8, 2008 VOL. 358 NO. 19

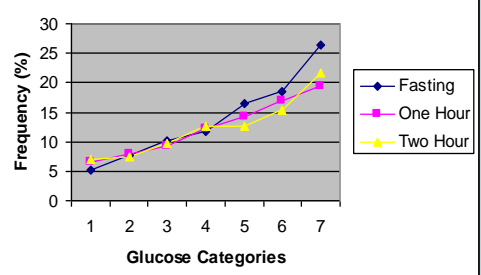
Hyperglycemia and Adverse Pregnancy Outcomes

The HAPO Study Cooperative Research Group*

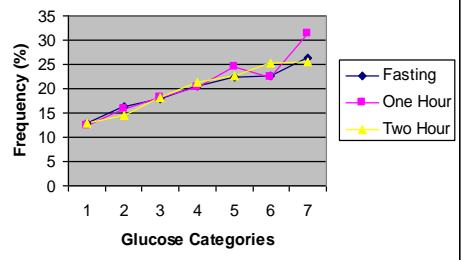
RESULTS

For the 23,316 participants with blinded data, we calculated adjusted odds ratios for adverse pregnancy outcomes associated with an increase in the fasting plasma glucose level of 1 SD (6.9 mg per deciliter [0.4 mmol per liter]), an increase in the 1-hour plasma glucose level of 1 SD (30.9 mg per deciliter [1.7 mmol per liter]), and an increase in the 2-hour plasma glucose level of 1 SD (23.5 mg per deciliter [1.3 mmol per liter]). For birth weight above the 90th percentile, the odds ratios were 1.38 (95% confidence interval [CI], 1.32 to 1.44), 1.46 (1.39 to 1.53), and 1.38 (1.32 to 1.44), respectively; for cord-blood serum C-peptide level above the 90th percentile, 1.55 (95% CI, 1.47 to 1.64), 1.46 (1.38 to 1.54), and 1.37 (1.30 to 1.44); for primary cesarean delivery, 1.11 (95% CI, 1.06 to 1.15), 1.10 (1.06 to 1.15), and 1.08 (1.03 to 1.12); and for neonatal hypoglycemia, 1.08 (95% CI, 0.98 to 1.19), 1.13 (1.03 to 1.26), and 1.10 (1.00 to 1.12). There were no obvious thresholds at which risks increased. Significant associations were also observed for secondary outcomes, although these tended to be weaker.

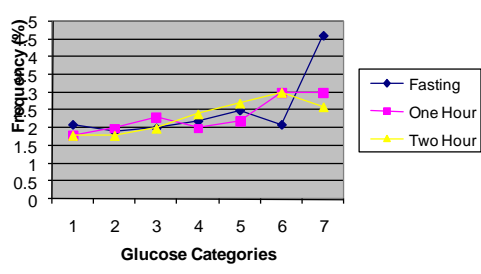
Birth Weight > 90th Percentile



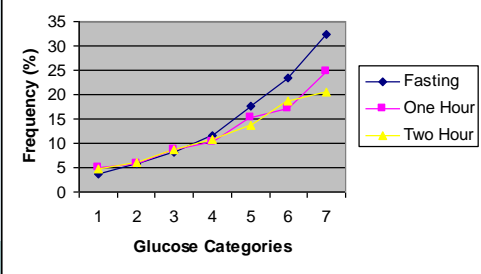
Primary C-Section



Clinical Hypoglycemia



Cord C-Peptide >90th Percentile





IADPSG

Hyperglycaemia in Pregnancy

Diagnostic Criteria

International Association of Diabetes and Pregnancy Study Groups
 Consensus Panel*
 Corresponding author: Boyd E. Metzger, bem@northwestern.edu.

The International Association of Diabetes and Pregnancy Study Groups (IADPSG) was formed in 1998 as an umbrella organization to facilitate collaboration between the various regional and national groups that have a primary or significant focus on diabetes and pregnancy. The principal objectives of IADPSG are to foster an international approach to enhancing the quality of care, facilitating research, and advancing education in the field of diabetes in pregnancy.

During 11-12 June 2008, the IADPSG sponsored an International Workshop- Conference on Gestational Diabetes Diagnosis and Classification in Pasadena, California. More than 225 conferees from 40

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This Article
 doi: 10.2337/dc09-1848
 Diabetes Care March 2010
 vol. 33 no. 3 676-682

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Current Issue
 March 2010, 33 (3)

From the Cover
 Alert me to new issues of Diabetes Care

American Diabetes Association
 70th scientific SESSIONS
 JUNE 25-29, 2010
 ORLANDO, FLORIDA



IADPSG Diagnostic Thresholds

GDM

Measure	Value (mmol/L)	Value (mg/dL)	Cumulative %
Fasting VPG	≥ 5.1	≥ 92	8.3
1 hr VPG	≥ 10.0	≥ 180	14.0
2 hr VPG	≥ 8.5	≥ 153	16.1

• **One or more** of these values from a 75-g OGTT must be equaled or exceeded for the diagnosis of GDM

• **Universal**



FIGO

NNT/NNS-GDM Vs General Obstetrics

Indication	NNT	NNS
Progesterone Prevention of PTB	3-7	100-413
LGA	12 (7.5, 19)	145 (90, 232)
Eclampsia/pre-eclampsia	103 (36, 292)	1,242 (431, 3,584)
Progesterone Short cervix	14-28	660
MgSo4 Neuroprotection	46-63	NA
MgSo4 Eclampsia	34-300	NA
Aspirin PET	19-200	NA
Aspirin IUGR	143	NA
Aspirin PTL	34-143	NA



WHO

2013



ELSEVIER

journal homepage: www.elsevier.com/locate/diabres



International
Diabetes
Federation



Report of a World Health Organization Consultation
**Diagnostic criteria and classification of
hyperglycaemia first detected in pregnancy:
A World Health Organization Guideline[☆]**





IDF

2014



ELSEVIER



International
Diabetes
Federation



Strategies for implementing the WHO diagnostic criteria and classification of hyperglycaemia first detected in pregnancy



Stephen Colagiuri ^{a,*}, Maicon Falavigna ^b, Mukesh M. Agarwal ^c,
Michel Boulvain ^d, Edward Coetzee ^e, Moshe Hod ^f, Sara J. Meltzer ^{g,h},
Boyd Metzger ⁱ, Yasue Omori ^j, Ingvars Rasa ^k, Maria Inês Schmidt ^b,
Veerasamy Seshiah ^l, David Simmons ^m, Eugene Sobngwi ^{n,o},
Maria Regina Torloni ^p, Hui-xia Yang ^q



FIGO and the GDM Initiative

FIGO brings together professional societies of obstetricians and gynecologists.

Member Societies in 130 countries.

The membership of FIGO is composed of 130 professional societies of obstetricians and gynecologists worldwide:



FIGO's vision is for women of the world to achieve the highest possible standards of physical, mental, reproductive and sexual health and wellbeing throughout their lives.



FIGO and the FIGO initiative for GDM

Identified ***GDM/HIP*** as a priority area for FIGO to work in and started the ***GDM Initiative in Jan. 2014***

by establishing an ***expert group*** to develop and disseminate an **Evidence-based, practical and pragmatic standards of care protocol**

for national associations to adopt and promote a uniform approach to testing, diagnosis and management of GDM for all countries and regions based on their; **financial, human and infrastructure resources.**

With the overall aim:

- **Advancement** of women's reproductive health and rights
- **Promotion** of newborn and child health
- **Prevention** of type 2 diabetes & other NCDs

= FIGO "JOINS THE GAME"



FIGO Guidelines produced

Dec 2013



Oct 2015

FIGO Expert Group on GDM established

Launch of guidelines on diagnosis, management and care



International Journal of Gynecology and Obstetrics 129 S1 (2015) S3–S41

Contents lists available at ScienceDirect



International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo

The International Federation of Gynecology and Obstetrics (FIGO) Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care[#]

Moshe Hod^a, Anil Kapur^b, David A. Sacks^c, Eran Hadar^{d,e}, Mukesh Agarwal^f, Gian Carlo Di Renzo^g, Luis Cabero Roura^h, Hema Divakarⁱ, Harold David McIntyre^j, Jessica L. Morris^k



FIGO (WHO) Classification

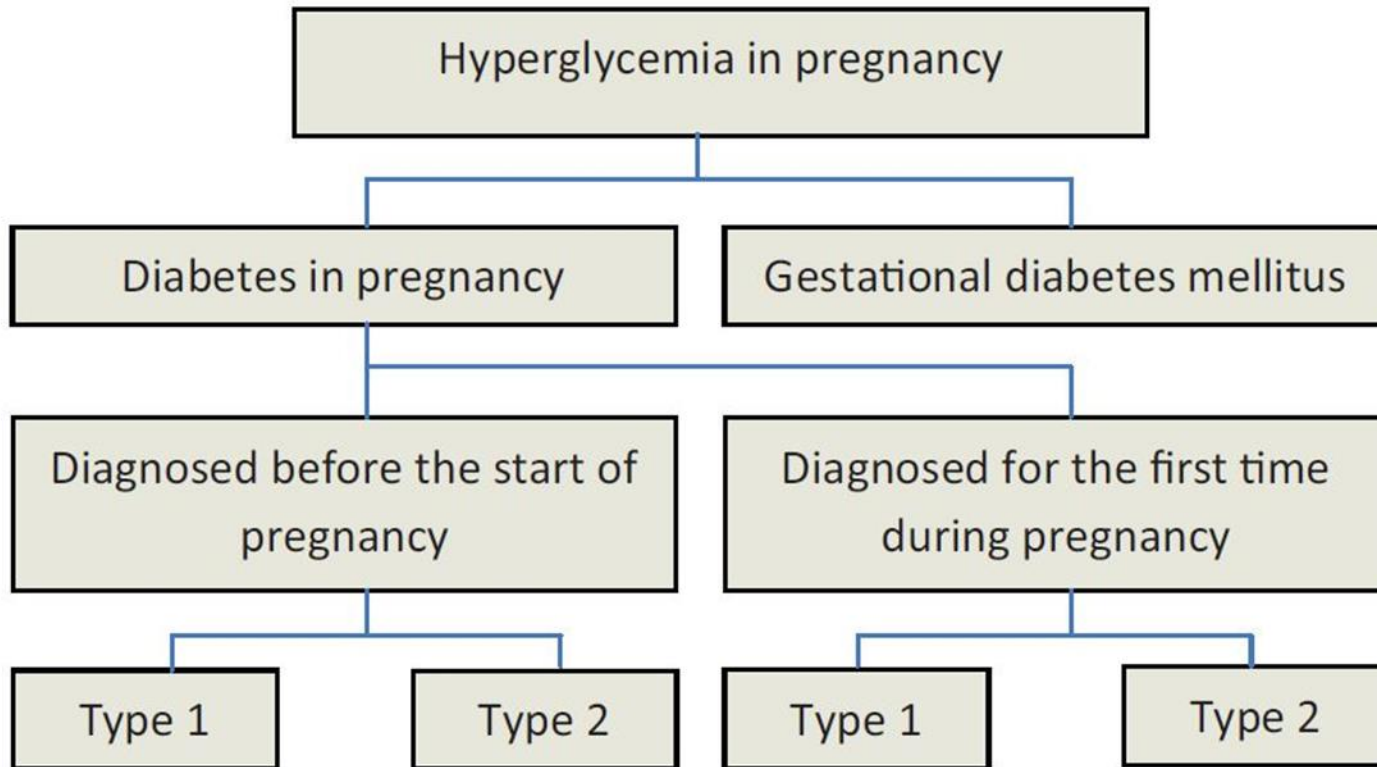


Figure 1 Types of hyperglycemia in pregnancy.



DIP & GDM = HIP

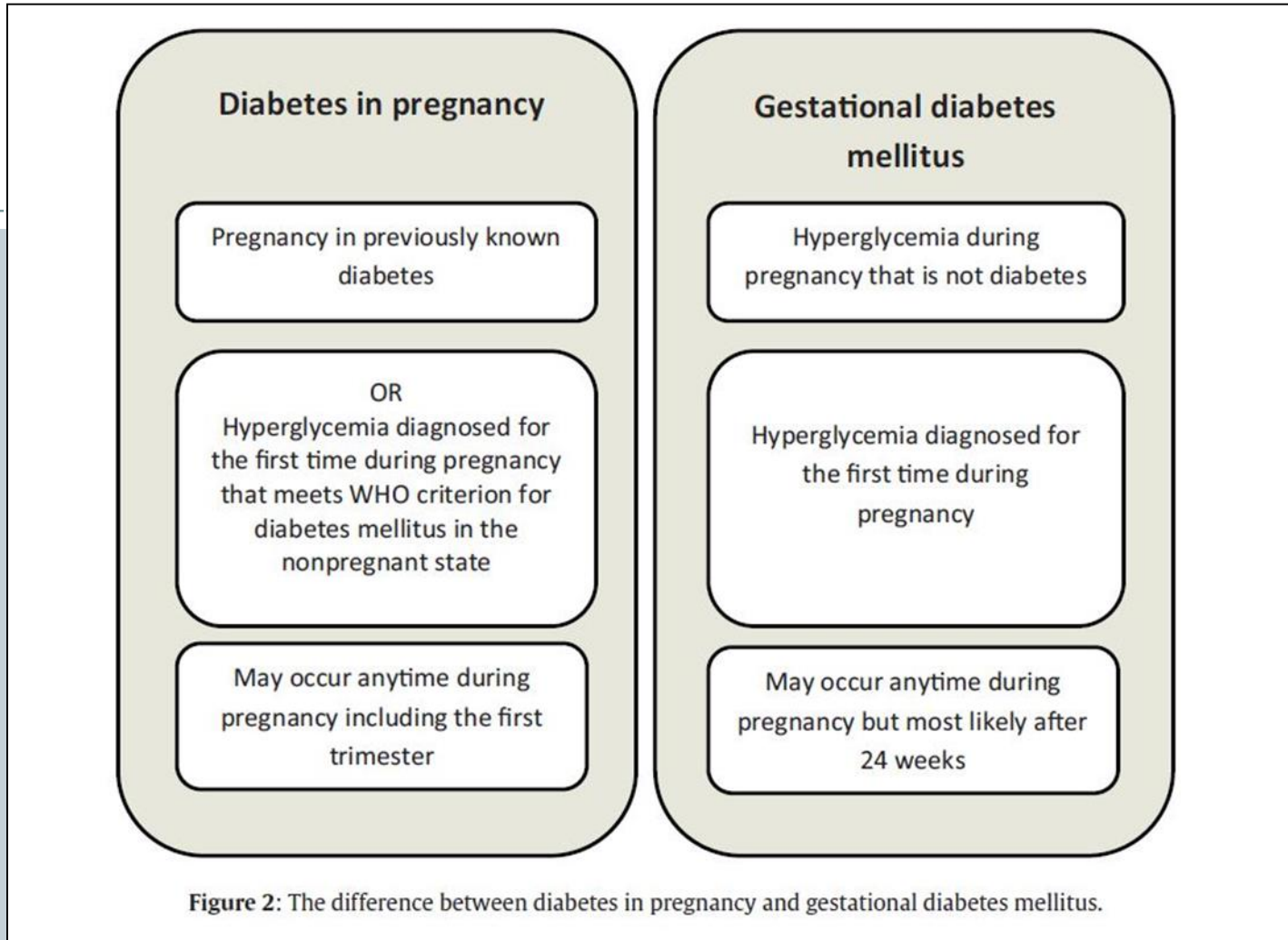


Figure 2: The difference between diabetes in pregnancy and gestational diabetes mellitus.



FIGO Box



FIGO recommends and supports
the call for greater attention and focus on the links
between

Maternal health

and

Non Communicable Diseases

in the sustainable developmental agenda.



FIGO – Main Messages

Universal Testing

- FIGO adopts and supports the **IADPSG/WHO/IDF** position that :
all pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure
- FIGO encourages **all countries...** to ensure ***universal testing of all pregnant women*** for hyperglycemia



FIGO Options for Diagnosis of GDM

Options for diagnosis of GDM based on resource settings.

Setting	Strategy			Grade
	Who to test and when	Diagnostic test	Interpretation ^a	
Fully resourced settings	All women at booking/first trimester 24-28 weeks	Measure FPG, RBG, or HbA1c to detect diabetes in pregnancy If negative: perform 75-g 2-hour OGTT		1 ⊕⊕⊕○
Fully resourced settings serving ethnic populations at high risk ^b	All women at booking/first trimester 24-28 weeks	Perform 75-g 2-hour OGTT to detect diabetes in pregnancy If negative: repeat 75-g 2-hour OGTT		2 ⊕○○○
Any setting (basic); particularly medium- to low-resource settings serving ethnic populations at risk	All women between 24 and 28 weeks	Perform 75-g 2-hour OGTT		1 ⊕⊕⊕○

The Real World



A pregnant woman waits for her gestational diabetes screening in Tamil Nadu, India. Photograph courtesy of the World Diabetes Foundation.



FIGO Alternative Strategies

FIGO

Alternative strategies as currently used in specified countries

China: Medium- to low- resource settings serving populations at high risk	All women at booking/first trimester	Measure FPG to detect diabetes in pregnancy	>7.0mmol/L or >126mg/dL. FPG values between 5.6 and 6.9mmol/L, (100–125mg/dL) consider as GDM [18]	2 ⊕○○○
	24–28 weeks	If negative: perform 75-g 2-hour OGTT Or To reduce number of OGTTs measure FPG. Only in women with values between 4.5mmol/L and 5.0mmol/L (81–90mg/dL) perform 75-g 2-hour OGTT	Value >5.1 mmol/L or >92mg/dL diagnostic of GDM	1 ⊕⊕⊕○
Indian subcontinent: Medium- to low- resource settings serving rural/semi- urban/urban ethnic populations at high risk	All women at booking/first trimester	Measure fasting or nonfasting 2-hour value after 75-g OGTT	Reading between 7.8 and 11.0mmol/L or 140 and 199mg/dL indicates GDM [19,20] ^c	2 ⊕○○○
	24–28 weeks	If negative: repeat test		
Latin America: Medium- to low- resource settings	All women at booking/first trimester	Measure FPG to detect diabetes in pregnancy	>7.0mmol/L or >126mg/dL. FPG values between 5.6 and 6.9mmol/L (100–125mg/dL), consider as GDM	2 ⊕○○○
	24–28 weeks	If negative: perform 75-g 2-hour OGTT	75-g 2-hour glucose value >7.8mmol/L or >140mg/dL is diagnostic of GDM ^d	
UK: all settings	Selected women at booking/as soon as possible ^e	Perform 75-g 2-hour OGTT	FPG of 5.6mmol/L or above or 2-hour plasma glucose of 7.8mmol/L or above is diagnostic ^g	
	24–28 weeks	If negative: perform 75-g 2-hour OGTT		
	Offered also to other women with risk factors for GDM ^f			



FIGO INITIATIVE ON GESTATIONAL DIABETES 1 of 4

FIGO recommends that hyperglycemia/ Gestational Diabetes Mellitus (GDM) be considered a global health priority



Hyperglycemia is one of the most common medical conditions women encounter during pregnancy



84% of which are due to GDM



HYPERGLYCEMIA/GDM IS ASSOCIATED WITH:

- Leading causes of **maternal mortality**
- Higher incidence of **maternal morbidity**
- Higher incidence of **perinatal and neonatal morbidity**
- Later **long term consequences** for both mother and child



GDM IS ON THE RISE GLOBALLY

Low and middle income countries account for:

- 85% of the annual **global deliveries**
- 80% of the **global diabetes burden**
- 90% of all cases of **maternal and perinatal deaths and poor pregnancy outcomes**

PREGNANCY OFFERS A WINDOW OF OPPORTUNITY

- Establish
- Improve

TO WORK TOWARDS ACHIEVING SUSTAINABLE DEVELOPMENT GOAL (SDG) 3

Given the link between poor pregnancy outcomes and SDG 3

FIGO INITIATIVE ON GESTATIONAL DIABETES 2 of 4

FIGO recommends universal testing—all pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure

WHY TEST DURING PREGNANCY?

- Maternal and newborn outcomes depend on maternal glycemic control
- Testing is the **only route** to diagnosis and management
- Testing only women with 'risk factors' will miss half of the women with GDM
- Although long term benefits and outcomes show that universal testing is **cost effective**



DIAGNOSIS

Use TO

Pragmatic guides for testing, diagnosis and management must be based on each country's available:

- Finances
- Human Resources
- Infrastructure Resources



FIGO INITIATIVE ON GESTATIONAL DIABETES 4 of 4

FIGO recommends the best GDM management

Aims:

- ANTENATAL CARE** with a GDM trained healthcare provider
- SELF-MONITORING BLOOD GLUCOSE** for all pregnant women with diabetes

PHARMACOLOGICAL THERAPY

to be initiated when lifestyle interventions are insufficient to achieve target glucose levels and to prevent complications

Fetal sonographic assessment can help determine size of the baby and diagnose fetal macrosomia (the most frequent complication of GDM)

Baby well-being should be assessed through a simple fetal kick count technique or when resources are available through biophysical profile including cardiotocography

Pregnancy with good glycaemic control and appropriate size fetus can continue until

40-41 weeks

Elective cesarean delivery may be recommended if fetal weight exceeds

4000 grams



Post-delivery the newborn must be **carefully observed** for respiratory distress and hypoglycemia



FIGO recommends using the postpartum period for increased engagement to improve health for mother and child

POSTPARTUM AIMS

- Early detection of infections**
- SUPPORT of breastfeeding**
- ADVICE** on pregnancy spacing
- RETEST** all women with GDM at 6-12 weeks postpartum
- Future blood glucose tests**

The postpartum period is an important platform to initiate early preventive health for both the mother and the child who are both at higher risk of:

- Future Obesity
- Metabolic Syndrome
- Diabetes
- Hypertension
- Cardiovascular Disorders

Both lifestyle intervention and metformin can be effective in delaying or preventing diabetes in women with impaired glucose tolerance and a history of GDM



Obstetricians to link with other healthcare providers to support postpartum follow-up through child vaccination/regular health visits

AIMS FOR PRECONCEPTION & INTER-PREGNANCY INTERVALS



Increase acceptance and access to preconception services



Universal pre-conception screening for malnutrition, anemia, overweight and obesity, hypertension, diabetes and thyroid dysfunction



INITIATIVE FIGO SUR LES DIABÈTES GESTATIONNELS

1 de 4

FIGO recommande que l'hyperglycémie/Diabète sucré gestationnel (DSG) soit considéré comme une priorité de santé mondiale

L'hyperglycémie est l'un des conditions médicales les plus courantes rencontrées par les femmes pendant la grossesse

1 naissance sur 6 se produit avec une certaine forme d'hyperglycémie

Dont 84 % sont dus au DSG



L'HYPERGLYCÉMIE/LE DSG SONT ASSOCIÉS A :

- Principales causes de mortalité maternelle
- Incidence plus élevée de morbidité maternelle
- Incidence plus élevée de morbidité périnatale et néonatale
- Conséquences ultérieures à long terme pour la mère et l'enfant

LE DSG EST MONDIALEMENT EN HAUSSE

Les pays à revenus faibles ou intermédiaires représentent :

- 85 % des accouchements mondiaux annuels
- 80 % du fardeau mondial du diabète
- 90 % de tous les cas de décès périnataux et maternels et grossesses à issues négatives



LA GROSSESSE OFFRE UNE POSSIBILITÉ DE :

- Établir des services
- Améliorer la santé
- Éviter la transmission intergénérationnelle de maladies non-transmissibles

Étant donné le lien existant entre l'hyperglycémie pendant la grossesse, les grossesses à issues négatives et le risque de diabète futur, à la fois chez la mère et l'enfant, un accent mis sur la prévention le dépistage, le diagnostic précoce et la gestion de l'hyperglycémie est nécessaire à l'échelle mondiale

TRAVAILLER À ATTEINDRE UN OBJECTIF DE DÉVELOPPEMENT DURABLE (ODD) 3



FIGO - INICIATIVA SOBRE LA DIABETES GESTACIONAL

1 de 4

FIGO recomienda que la hiperglucemia / diabetes mellitus gestacional (DMG) se considere una prioridad global de la salud

La hiperglucemia es una de las condiciones médicas más comunes a las que se enfrentan las mujeres durante el embarazo

1 de 6 niños nacidos vivos nacen de mujeres con algún tipo de hiperglucemia

el 84% de los casos se deben a DMG



LA HIPERGLUCEMIA/DMG ESTÁ RELACIONADA CON:

- Las principales causas de mortalidad materna
- Una mayor incidencia de morbilidad materna
- Una mayor incidencia de morbilidad perinatal y neonatal
- Consecuencias tardías a largo plazo tanto para la madre como para el hijo

LA DMG ESTÁ AUMENTANDO A NIVEL GLOBAL

Los países de ingresos bajos y medios representan:

- el 85% de los partos anuales globales
- el 80% de la diabetes global
- el 90% de todos los casos de muertes maternas y perinatales y de trastornos en los embarazos



EL EMBARAZO OFRECE UNA BUENA OPORTUNIDAD PARA:

- Establecer servicios
- Mejorar la salud
- Prevenir la transmisión intergeneracional de enfermedades no transmisibles

TRABAJAR PARA CONSEGUIR UN OBJETIVO DE DESARROLLO SOSTENIBLE (SDG) 3

Teniendo en cuenta el vínculo entre la hiperglucemia en el embarazo, los trastornos en el embarazo y los riesgos futuros de diabetes tanto en la madre como en los hijos, se necesita un enfoque sobre la prevención, la detección, el diagnóstico precoz y sobre cómo gestionar la hiperglucemia globalmente





Chinese

国际妇产科联盟 (FIGO) 关于妊娠期糖尿病的建议

1 / 4

FIGO提出妊娠期高血糖/妊娠期糖尿病 (GDM) 是影响全球健康的重要问题



妊娠期高血糖是妊娠期妇女最常遇到的健康问题之一



妊娠期高血糖/GDM:

- 导致母亲死亡;
- 增加母亲患病率;
- 增加围产儿和新生儿患病率;
- 导致母亲和子代远期不良结局;

GDM发病率在全球呈上升趋势

妊娠期我们有机会:

- 建立医疗管理模式;
- 促进产妇健康;
- 预防隔代间非传染性疾病的传播;

努力达到联合国可持续发展目标第三条“确保良好的健康与福祉”

由于妊娠期高血糖与不良妊娠结局以及母子远期患糖尿病间存在密切联系,因此我们需要加强对妊娠期高血糖的预防、筛查、早期诊断和管理。



Taken from The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus: A Pragmatic Guide for Diagnosis, Management, and Care. Int. J. Gynecol. Obstet. 2016;131(Suppl 3):S17-S112. The FIGO GDM Initiative (Phase 1) was funded with an unrestricted educational grant from Novartis.



国际妇产科联盟 (FIGO) 关于妊娠期糖尿病的建议

2 / 4

FIGO建议实行普遍筛查——所有妊娠期妇女都需通过一步法进行妊娠期高血糖筛查

为什么要在妊娠期进行此项检查?

- 母亲妊娠期血糖水平影响母子妊娠结局;
- 孕期血糖检查是诊断和管理妊娠期高血糖的唯一途径;
- 只检查有高危因素的孕妇将会漏诊一半GDM患者;
- 妊娠远期结局和获益提示普遍检查是经济有效的;



正确诊断

诊断最好采用静脉血实验室检查,但标准化的手持血糖仪检测也是可被采用的



依照WHO诊断标准

实用的检查、诊断和管理指南需考虑各国的实际情况

- 资金
- 人力
- 基础设施

各国都有义务全力推行最佳的检测管理模式!



Taken from The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus: A Pragmatic Guide for Diagnosis, Management, and Care. Int. J. Gynecol. Obstet. 2016;131(Suppl 3):S17-S112. The FIGO GDM Initiative (Phase 1) was funded with an unrestricted educational grant from Novartis.



国际妇产科联盟 (FIGO) 关于妊娠期糖尿病的建议

3 / 4

FIGO建议所有国家依据已有资源建立最佳的GDM管理模式

目标:

- 密切随访
- GDM患者孕期自我血糖监测

生活方式管理

营养师咨询和运动锻炼是降低远期肥胖、2型糖尿病和心血管系统疾病发病风险的关键

药物管理

如果生活方式干预不能有效地控制孕期血糖,二甲双胍、格列本脲和胰岛素可作为安全有效的药物治疗选择

胎儿超声评估有助于判断胎儿大小并诊断巨大儿 (GDM最常见的并发症)

胎儿健康状态可以通过简单胎动或其他胎儿生理监测手段 (如胎心监护) 来评估

孕期血糖控制良好且胎儿大小正常的孕妇可持续妊娠到

40-41 孕周

当胎儿体重超过: 应当考虑选择择期剖宫产

4000 克



产后应严密监测是否发生新生儿呼吸窘迫、新生儿低血糖



Taken from The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus: A Pragmatic Guide for Diagnosis, Management, and Care. Int. J. Gynecol. Obstet. 2016;131(Suppl 3):S17-S112. The FIGO GDM Initiative (Phase 1) was funded with an unrestricted educational grant from Novartis.



国际妇产科联盟 (FIGO) 关于妊娠期糖尿病的建议

4 / 4

FIGO建议完善产后随访以改善母亲健康

产后目标

- 早期发现感染
- 支持母乳喂养
- 妊娠间隔建议
- GDM孕妇产后6-12周复查
- 产后持续血糖监测

对有以下疾病高危风险的母亲和子代,产后是开展早期预防干预的关键时期:

- 肥胖
- 代谢综合征
- 糖尿病
- 高血压
- 心血管疾病

对妊娠期糖耐量受损和有GDM病史的孕妇,生活方式干预和二甲双胍能有效预防和推迟糖尿病的发生。



产科医生应联合其他医护人员,在为幼儿接种疫苗和定期体检的同时,完善产后随访。

妊娠前及妊娠期间的目标



提高妊娠前咨询及检查的接受度和可行性。



孕前普查: 营养不良、贫血、超重和肥胖、高血压、糖尿病及甲状腺功能异常。



Taken from The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus: A Pragmatic Guide for Diagnosis, Management, and Care. Int. J. Gynecol. Obstet. 2016;131(Suppl 3):S17-S112. The FIGO GDM Initiative (Phase 1) was funded with an unrestricted educational grant from Novartis.



FIGO GDM guidelines

Executive summary

The target audience

Assessment of quality of evidence and grading of recommendation

Gestational Diabetes Mellitus(GDM)–Background, Definition, Epidemiology, Pathophysiology

Diagnosing Gestational Diabetes Mellitus

Glucose Measurement: Technical considerations in laboratory and point of care (POC)testing

Management during pregnancy

Post-Partum Management

Pre Conception Care

Research Priorities

Appendix

Current Approaches to GDM diagnosis in selected high burden developing countries

Gestational Diabetes Formulas for Cost-Effectiveness - GeDiForCE[®]

Research Priorities in Gestational Diabetes

**Recommendations
graded by quality
of evidence**

**Provides a call
for action to
policy makers**

**Provides options
according to
resource setting**

**Identifies key
points of
intervention**

FIGO GDM guidance: Some highlights

1: Describes and differentiates GDM

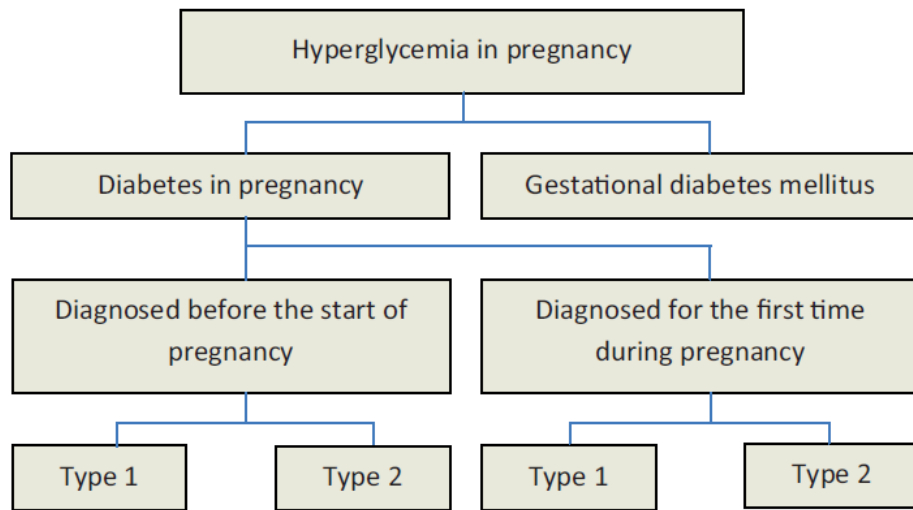


Figure 1 Types of hyperglycemia in pregnancy.

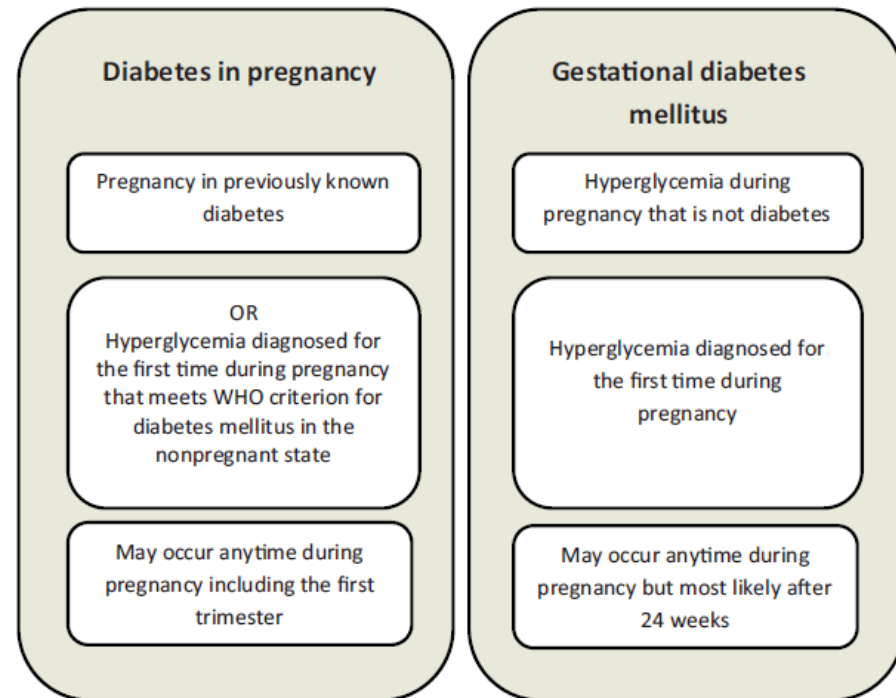


Figure 2 The difference between diabetes in pregnancy and gestational diabetes mellitus.



2. Highlights the significance for global health

Table 3
Maternal and fetal morbidity associated with gestational diabetes mellitus.

Maternal morbidity	Fetal/neonatal/child morbidity
<i>Early pregnancy</i>	Stillbirth
Spontaneous abortions	Neonatal death
<i>Pregnancy</i>	Nonchromosomal congenital malformations
Pre-eclampsia	Shoulder dystocia
Gestational hypertension	Respiratory distress syndrome
Excessive fetal growth (macrosomia, large for gestational age)	Cardiomyopathy
Hydramnios	Neonatal hypoglycemia
Urinary tract infections	Neonatal polycythemia
<i>Delivery</i>	Neonatal hyperbilirubinemia
Preterm labor	Neonatal hypocalcemia
Traumatic labor	Erb's palsy (as consequence of birth injury)
Instrumental delivery	Programming and imprinting; fetal origins of disease: diabetes, obesity, hypertension, metabolic syndrome
Cesarean delivery	
Postoperative/postpartum infection	
Postoperative/postpartum hemorrhage	
Thromboembolism	
Maternal morbidity and mortality	
Hemorrhage	
<i>Puerperium</i>	
Failure to initiate and/or maintain breastfeeding	
Infection	
<i>Long-term postpartum</i>	
Weight retention	
GDM in subsequent pregnancy	
Future overt diabetes	
Future cardiovascular disease	

FIGO Boxes highlight salient points

- FIGO recommends and supports the call for greater attention and focus on the links between maternal health and noncommunicable diseases in the sustainable developmental agenda.



3: Advocates for Universal Testing

Universal testing: All pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure and FIGO encourages all countries and its member associations to adapt and promote strategies to ensure this.

- FIGO adopts and supports the IADPSG/WHO/IDF position that all pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure.
- FIGO encourages all countries and its member associations to adapt and promote strategies to ensure universal testing of all pregnant women for hyperglycemia during pregnancy.
- All countries have an obligation to implement the best GDM testing and management practices they can.
- FIGO acknowledges that for global progress to be made, India, China, Nigeria, Pakistan, Indonesia, Bangladesh, Brazil, and Mexico must be key targets for focused GDM attention



4: Offers universal criteria for diagnosis

Criteria for diagnosis: The WHO criteria for diagnosis of diabetes mellitus in pregnancy [1] and the WHO and the International Association of Diabetes in Pregnancy Study Groups (IADPSG) criteria for diagnosis of GDM [1,2] should be used when possible.

- FIGO adopts the WHO (2013) criteria for diagnosis of diabetes mellitus in pregnancy.
- FIGO adopts the WHO (2013) and IADPSG (2010) criteria for diagnosis of gestational diabetes mellitus. Given the resource constraints in many low-resource countries, other strategies described herein are considered equally acceptable.

5: Recommendation for diagnosis

Table 4
Options for diagnosis of gestational diabetes mellitus based on resource settings.

Setting	Strategy			Grade
	Who to test and when	Diagnostic test	Interpretation ^a	
Fully resourced settings	All women at booking/first trimester	Measure FPG, RBG, or HbA1c to detect diabetes in pregnancy		1 ⊕⊕⊕⊕
	24–28 weeks	If negative: perform 75-g 2-hour OGTT		
Fully resourced settings serving ethnic populations at high risk ^b	All women at booking/first trimester	Perform 75-g 2-hour OGTT to detect diabetes in pregnancy		2 ⊕○○○
	24–28 weeks	If negative: perform 75-g 2-hour OGTT		
Any setting (basic); particularly medium- to low-resource settings serving ethnic populations at risk	All women between 24 and 28 weeks	Perform 75-g 2-hour OGTT		1 ⊕⊕⊕○

While this is the optimal recommendation, alternatives are given in acknowledgement of limitations faced in diverse settings



Pragmatic guides for **testing, diagnosis** and **management** must be based on each country's available:



Finances



Human Resources



Infrastructure Resources



6: Provides standards for lab testing

Technical considerations in laboratory and point of care (POC) testing

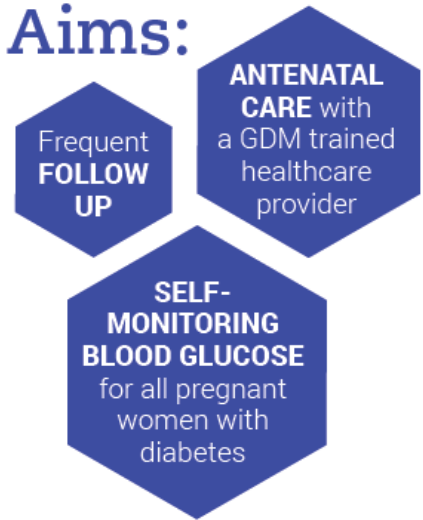
- GDM diagnosis should be ideally based on blood tests done in an accredited laboratory on properly collected and transported venous plasma samples.
- FIGO recommends the use of a plasma-calibrated handheld glucometer with properly stored test strips to measure plasma glucose in primary care settings, particularly in low-resource countries, where a close-by laboratory or facilities for proper storage and transport of blood samples to a distant laboratory may not exist. This may be more convenient and reliable than tests done on inadequately handled and transported blood samples in a laboratory. It is recommended that from time to time a few samples are parallel tested in an accredited laboratory to document the variability.
- FIGO recommends that all laboratories and clinical services document their baseline quality and work toward improvement irrespective of the resources available.



7: Describes care for women with GDM

Management of GDM: Management should be in accordance with available national resources and infrastructure even if the specific diagnostic and treatment protocols are not supported by high-quality evidence, as this is preferable to no care at all.

Aims:



Box 1

Recommendations for prenatal supervision in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
Routine prenatal care should include visits to: <ul style="list-style-type: none"> Healthcare professionals skilled in care of women with diabetes in pregnancy (obstetrician, perinatologist, diabetologist, diabetes educator, nutritionist etc): 1-3 weeks as needed Nurse: Weight, blood pressure, dipstick urine protein: 1-2 weeks as needed 	High	1 ⊕○○○
Prenatal follow-up determined locally according to available resource: <ul style="list-style-type: none"> A minimum of monthly check-ups with a healthcare provider knowledgeable in diabetes in pregnancy 	Mid and Low	2 ⊕○○○



7: Describes care for women with GDM

Box 2

Recommendations for fetal growth assessment in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
Clinical and sonographic growth assessments every 2–4 weeks from diagnosis until term	High	1 ⊕○○○
Periodic clinical and sonographic growth assessments from diagnosis until term	Mid and Low	2 ⊕○○○

Box 3

Recommendations for fetal well-being surveillance in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
Use cardiotocography and/or biophysical profile or kick-count as indicated according to local protocol	All	1 ⊕○○○

7: Describes care for women with GDM



Box 4

Recommendations for timing and mode of delivery in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
As per local protocol or as suggested in Figure 4	All	2 ⊕○○○

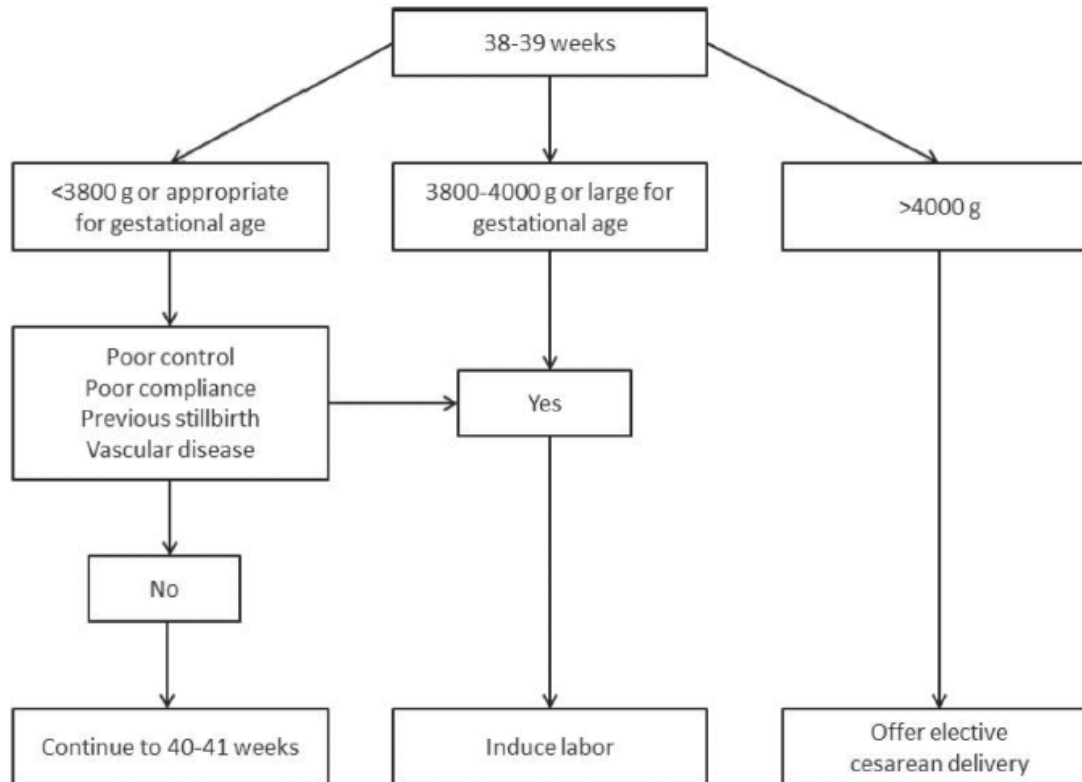


Figure 4. Timing of delivery in women with gestational diabetes mellitus and diabetes in pregnancy.



7: Describes care for women with GDM

Pharmacological management: If lifestyle modification alone fails to achieve glucose control, metformin, glyburide, or insulin should be considered as safe and effective treatment options for GDM.

Box 5

Recommendations for glucose monitoring in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
Self-monitoring of blood glucose is recommended for all pregnant women with diabetes, 3–4 times a day: <ul style="list-style-type: none">• Fasting: once daily, following at least 8 hours of overnight fasting• Postprandial: 2-3 times daily, 1 or 2 hours after the onset of meals, rotating meals on different days of the week	All	2 ⊕⊕○○
Self-monitoring of blood glucose is recommended for all pregnant women with diabetes at least once daily, with documented relation to timing of meal	Low	2 ⊕○○○



7: Describes care for women with GDM

Box 9

Recommendations for **nutrition therapy** in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
-----------------	------------------	--

We recommend that the following principles should be adhered to by women with diabetes:

- Design an appropriate diet with respect to prepregnancy BMI, weight, physical activity, habits, and personal and cultural preferences.
- Provide routine follow-up and diet adjustments throughout pregnancy to achieve and maintain treatment goals.
- Offer training, education, support, and follow-up by a qualified professional experienced in care of women with diabetes. Issues for discussion include: weight control, food records, carbohydrate counting, hypoglycemia, healthy foods, and physical activity.

We suggest that caloric intake be calculated based on prepregnancy weight.

- FIGO recognizes that nutrition counseling and physical activity are the primary tools in the management of GDM.
- FIGO recommends that women with GDM receive practical nutrition education and counseling that empowers them to choose the right quantity and quality of food.
- Women with GDM must be repeatedly advised to continue the same healthy eating habits after delivery to reduce the risk of future T2DM.

Box 10

Recommendations for **physical activity** in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
-----------------	------------------	--

We suggest that appropriate, personally adapted, physical activity be recommended for all women with diabetes:

- Planned physical activity of 30 min/day
- Brisk walking or arm exercises while seated in a chair for 10 min after each meal.
- Women physically active prior to pregnancy should be encouraged to continue their previous exercise routine.

All

2|⊕⊕○○



7: Describes care for women with GDM

Box 11
 Recommendations for **pharmacological treatment** in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
<p>Insulin, glyburide, and metformin are safe and effective therapies for GDM during the second and third trimesters, and may be initiated as first-line treatment after failing to achieve glucose control with lifestyle modification. Among OADs, metformin may be a better choice than glyburide [109].</p>	All	2 ⊕⊕○○
<p>Insulin should be considered as the first-line treatment in women with GDM who are at high risk of failing on OAD therapy, including some of the following factors [129]:</p> <ul style="list-style-type: none"> • Diagnosis of diabetes <20 weeks of gestation • Need for pharmacologic therapy >30 weeks • Fasting plasma glucose levels >110 mg/dL • 1-hour postprandial glucose >140 mg/dL • Pregnancy weight gain >12 kg 	High	2 ⊕⊕○○

Box 12
 Recommendations for **insulin treatment** in women with gestational diabetes mellitus.

Recommendations	Resource setting	Strength of recommendation and quality of evidence
<p>The following insulins may be considered safe and effective treatment during pregnancy: regular insulin, NPH, lispro, aspart and detemir.</p>	All	1 ⊕⊕⊕○



8: Includes recommendations for Pre-conception and inter-pregnancy



Increase acceptance and access to **preconception services**



Universal pre-conception screening for malnutrition, anemia, overweight and obesity, hypertension, diabetes and thyroid dysfunction

- FIGO calls for public health measures to increase awareness and acceptance of preconception counseling and to increase affordability and access to preconception services to women of reproductive age, as this is likely to have both immediate and lasting benefits for maternal and child health.



9: Includes recommendations for Postpartum care

- FIGO supports the concept that the postpartum period in women with GDM provides an important platform to initiate early preventive health for both the mother and the child who are both at a heightened risk for future obesity, metabolic syndrome, diabetes, hypertension, and cardiovascular disorders.
- FIGO encourages obstetricians to establish connections with family physicians, internists, pediatricians, and other healthcare providers to support postpartum follow-up of GDM mothers linked to the regular check-up and vaccination program of the child to ensure continued engagement of the high-risk mother-child pair.

PREGNANCY OFFERS A WINDOW OF OPPORTUNITY TO:

- **Establish** services
- **Improve** health
- **Prevent** intergenerational transmission of non-communicable diseases

POSTPARTUM AIMS



Early **DETECTION** of infections



SUPPORT of breastfeeding



ADVICE on pregnancy spacing



RETEST all women with GDM at 6-12 weeks postpartum



Future blood glucose **TESTS**

Endorsements & Approvals

Approved

- Chinese Society of Perinatal Medicine
- European Board and College of Obstetrics and Gynaecology (EBCOG)
- European Diabetic Pregnancy Study Group (DPSG)
- African Federation of Obstetrics and Gynecology (AFOG)
- Latin America Diabetic Pregnancy Study Group (LADPSG)
- The Australian Diabetes in Pregnancy Society (ADIPS)
- International Association of Diabetes in Pregnancy Study Groups (IADPSG)
- International Association of Diabetes in Pregnancy Study Groups (IADPSG)
- European Association of Perinatal Medicine (EAPM)
- Diabetes in Pregnancy Study Group of India (DIPSI)
- RCOG - pending
- International Diabetes Foundation (IDF)



FIGO Committees endorsement:

- *Executive Board*
- *Best Practice on Maternal-Foetal Medicine Working Group*
- *FIGO Clinical Obstetrical Committee*
- *FIGO Maternal Nutrition Initiative Expert Group*
- *FIGO Challenges in Care of Mothers and Infants during Labour and Delivery Working Group*
- *FIGO Antenatal assessment*
- *FIGO Safe Motherhood and Newborn Health Committee*



FIGO became serious partner in effort to fight HIP

The Vancouver Declaration
Vancouver (Canada), October
& December 2015
Organized by **FIGO** and **IDF**





Focus and dissemination

All countries have an obligation to implement the best testing and management practices they can!

PRIORITY COUNTRIES:

India, China, Nigeria, Pakistan, Indonesia, Bangladesh, Brazil and Mexico



These 8 countries account for 55% of global live births and 55% of the global burden of diabetes





New HIP Working Group

Jan 2016

FIGO Working Group
on HIP instated



Oct 2018

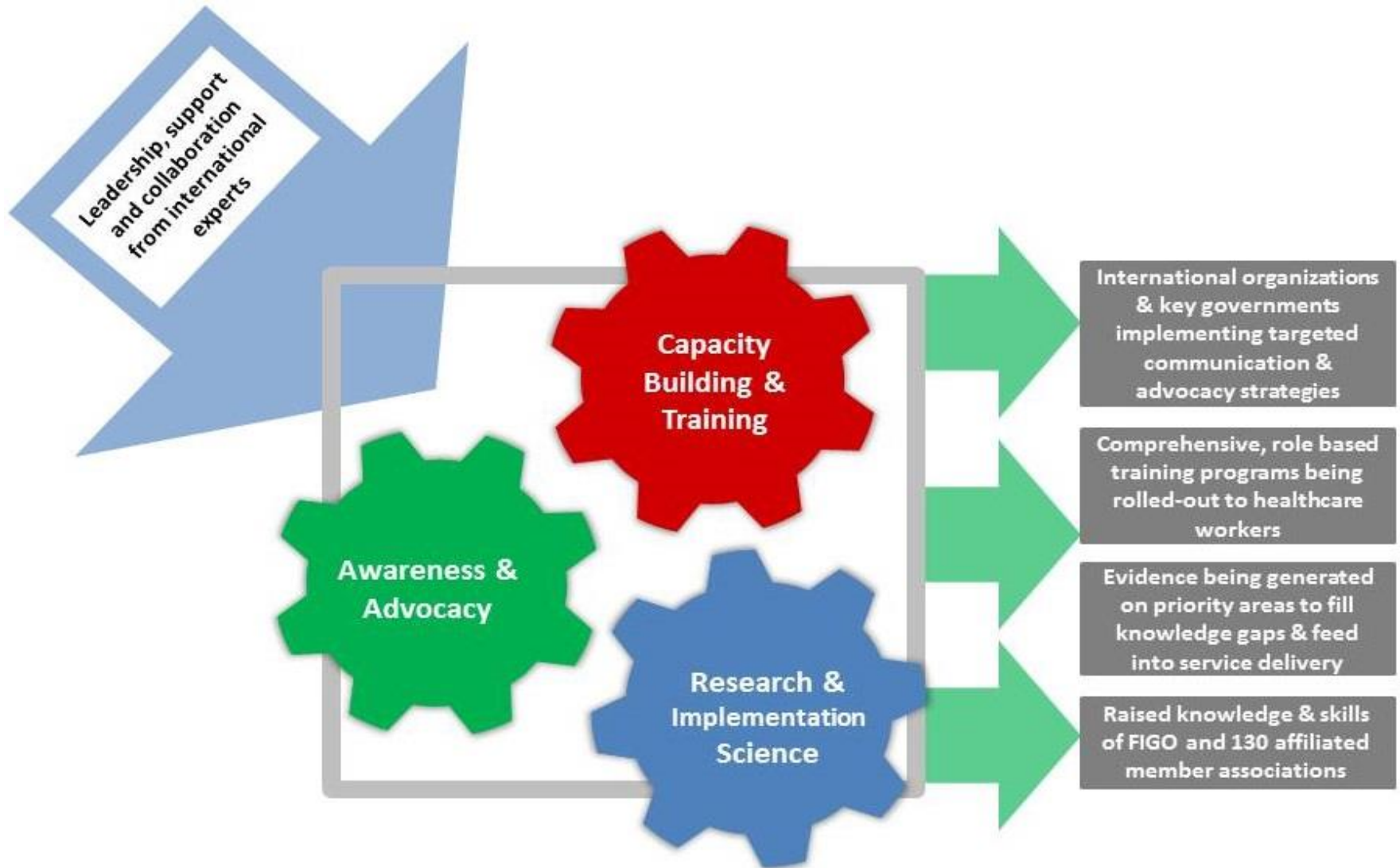
Report on successes
at FIGO World
Congress

“

*Training, advocacy and evidence generation on
hyperglycaemia in pregnancy to **reduce** poor pregnancy outcomes;
decrease maternal and neonatal morbidity and mortality;
and **cut** future risk of diabetes & cardio-vascular disease*

”

The next three years





The Strength of FIGO

- **Commitment from FIGO**
- **Strong Partnerships with International Organizations**
- **130 National Member Associations**
- **FIGO Perinatal involvement**

- **HIP Initiative Working Group** (M. Hod)
- **Good Clinical Practice in MFM Working Group** (GC Di Renzo)
- **Care of Mothers and Infants during labor and Delivery** (R. Romero)
- **Safe Motherhood and Newborn Health Committee** (G. Visser)
- **Adolescent, Pre-conception and Maternal Nutrition** (M. Hanson)
- **Pre-term Labor** (J.L. Simpson)
- **Antenatal Assessment** (D.A. De Campos)



Signing of the Colombo Declaration

DIP AP 2016
The 1st Asia Pacific Symposium on
Diabetes, Hypertension, Metabolic
Syndrome and Pregnancy
Maternal Medicine meets Fetal Medicine

In conjunction with
SAIDIP
South Asian Initiative for
Diabetes in pregnancy

Colombo, Sri Lanka
September 8-10, 2016





The European HIP Declaration

The Barcelona Declaration
On
Hyperglycemia in Pregnancy

We, Hereby Agree

To undertake actions in our various capacities to support efforts to address the link between maternal health obesity and diabetes as a public health priority

To accelerate the implementation of the FIGO GDM Initiative

[http://www.ijgo.org/issue/S0020-7292\(15\)X0015-4](http://www.ijgo.org/issue/S0020-7292(15)X0015-4)

in Europe, including by pursuing supportive policy actions and mobilizing resources for its implementation.



The European HIP Declaration

To ensure all pregnant women in Europe attending health facilities are tested for hyperglycemia using a single-step procedure. We must keep in mind accessibility and other barriers, to offer simple, cost effective, feasible and timely diagnostic tests as advocated by FIGO GDM Initiative.

To make all efforts to support post-partum follow up and engagement of the high risk mother child pair post-GDM pregnancy linked to the child's vaccination program by engaging and collaborating with other health care professionals.

To help develop, support and carry out a robust research agenda that fuels both the discovery of new tools and procedures to improve point of care diagnostics, monitoring and management of HIP and the ability to engage, counsel and track the mother-child pair over the long term; as well as carry out operational research to improve collaboration and efficacy in existing programs, keeping in mind the health care delivery realities in different parts of Europe.

Barcelona, Spain

March 2016



Signing of the European Declaration





DIP AP 2017

— GREATER CHINA —

*The 2nd Asia Pacific Symposium on
Diabetes, Hypertension, Metabolic Syndrome
and Pregnancy*

Maternal Medicine meets Fetal Medicine

Digital Medicine and Women's Health

SHANGHAI, CHINA • OCTOBER 26-28, 2017



Save the Date

The FIGO *HIP* Global Declaration

Rio De Janeiro , October 2018

The Road Map

SAIDIP - Accomplished	Colombo , Sri Lanka (Sept. 2016) –
AFOG –	Addis, Ethiopia (February 2017)
Europe -	Barcelona , Spain (March 2017)
Asia –	Bangalore, India (March-April 2017)
Greater China-	Beijing , China (Sept. 2017)
FLASOG-	Cancun, Mexico (Nov. 2017)
GULF/MENA –	Abu Dhabi , UAE (Dec. 2017) - with IDF

Rio October 2018
FIGO GLOBAL HIP DECLARATION



DOI: 10.1111/1471-0528.14659

www.bjog.org

Commentary

The unmet need for universal testing for hyperglycaemia in pregnancy and the FIGO guideline

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Accepted 23 March 2017.

EDITORIALE

Diabete gestazionale: verso un nuovo consenso

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Sono decenni ormai che, quando si parla di diabete gestazionale, si fa riferimento a una “patologia senza consenso”. Dopo aver superato, infatti, lo scetticismo di chi, negli anni ottanta, non voleva riconoscere al diabete gestazionale la dignità di “entità clinica”, continuano a permanere notevoli differenze di vedute su vari aspetti del percorso diagnostico-terapeutico di questa patologia. Screening universale o selettivo, iter diagnostico mediante una fase unica o a due fasi, carico glucidico con 75 o 100 grammi, monitoraggio aggressivo con rischio di “medicalizzare” la gravidanza o “morbido” con il rischio di favorire un outcome materno-fetale sfavorevole e, infine, dopo la dieta solo l’insulina o anche la metformina, se non addirittura le sulfoniluree? E, ancora, a chi spetta la cura delle donne con diabete gestazionale? Quale il ruolo del diabetologo? Gran parte di questi interrogativi persistono tutt’oggi, nonostante sia ormai unanimemente accettato che il diabete gestazionale è a tutti gli effetti un’entità nosografica ben distinta, che se non riconosciuta e adeguatamente trattata si associa a un’elevata morbilità materno-fetale. Diagnosticare il diabete in gravidanza permette, inoltre, di identificare donne a rischio di sviluppare il diabete di tipo 2 e altre anomalie metaboliche associate alla malattia cardiovascolare. Sono, infatti, tante le affinità tra il diabete gestazionale e il diabete di tipo 2, da far sembrare uno l’anticipazione dell’altro.

Sono, infatti, tante le affinità tra il diabete gestazionale e il diabete di tipo 2, da far sembrare uno l’anticipazione dell’altro. Per anni la comunità scientifica ha atteso con ansia i risultati del più grande studio internazionale mai condotto sul tema: L’Hyperglycemic Adverse Pregnancy Outcome Study (HAPO Study). L’HAPO Study, pur mostrando con chiarezza il rapporto lineare tra glicemia materna e outcome gravidici avversi, non è riuscito a definire un valore “soglia” tra condizione normale e patologica. In altri termini ha mancato uno degli obiettivi principali per cui era stato disegnato: stabilire in maniera definitiva a quale livello di glicemia materna bisogna far riferimento per la diagnosi e quindi per la terapia del diabete a insorgenza in gravidanza.

I criteri diagnostici ricavati in maniera alquanto arbitraria dai risultati dell’HAPO hanno trovato solo una parziale accoglienza, venendo rigettati da importanti consessi e società scientifiche internazionali.

In questo contesto, la Federation of Gynecology and Obstetrics (FIGO) ha pubblicato nel 2015 una linea guida per la diagnosi, il management e il trattamento del diabete gestazionale, con l’intento di creare intorno a questo documento un nuovo e definitivo consenso. Il documento affronta a 360 gradi le varie problematiche del GDM, partendo dalla considerazione che si tratta di un problema di salute pubblica che merita di essere conosciuto per essere efficacemente prevenuto.

Intorno a questo documento, pratico e incisivo, la FIGO si adopera per cercare un consenso internazionale a partire dall’Europa. Il Giornale Italiano di Diabetologia e Metabolismo si unisce a quest’intento pubblicando la versione italiana del documento “Towards a European Consensus on Gestational Diabetes Mellitus”. Il confronto con la situazione italiana, come viene sottolineato nell’articolo redatto dal Gruppo di Studio Diabete e Gravidanza, deve servirci da stimolo per una revisione critica delle nostre procedure che, tra l’altro, sono applicate in maniera diversa nei vari ambiti regionali. È giunto il momento di trovare un consenso nazionale e internazionale sul diabete gestazionale. Il documento della FIGO che presentiamo in questo numero è un’autorevole base di partenza.

PER CONSULTAZIONE

Verso un consenso europeo sul diabete gestazionale: guida pragmatica a diagnosi, management e trattamento *Gruppo di Studio Italiano Diabete e Gravidanza e FIGO*

Hod M^{1,2}, Napoli A^{1,3}, Mello G^{4,5}, Mecacci F^{4,5}, Vitacolonna E^{6,7}

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RIASSUNTO

L'aumento dell'incidenza di diabete e obesità a livello mondiale ha portato l'International Federation of Gynecology and Obstetrics (FIGO) nel 2014 a intraprendere una nuova iniziativa per aumentare la consapevolezza relativa al legame tra iperglicemia in gravidanza, outcome materno e fetale avverso, e rischio per la salute futura sia della madre sia del neonato. Per raggiungere tale scopo la FIGO ha riunito un gruppo di esperti per inquadrare il problema e ha sviluppato un documento che suggerisce la migliore strategia per il management dell'iperglicemia in gravidanza nell'organizzazione della sanità pubblica.

Il documento FIGO "*Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care*" è stato presentato al congresso mondiale FIGO nell'ottobre 2015 a Vancouver e pubblicato come supplemento speciale sull'*International Journal of Gynecology and Obstetrics*⁽¹⁾. Il documento fornisce una guida pragmatica per la diagnosi, il management e il trattamento del diabete mellito gestazionale (DG) in relazione alle risorse socio-economiche dei vari Paesi ed evidenzia la necessità di un programma chiaramente definito per affrontare il problema a livello mondiale.

SUMMARY

Towards a European consensus on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care
The Italian Diabetes in Pregnancy Study Group and FIGO

In view of the rising global burden of diabetes and obesity the International Federation of Gynecology and Obstetrics (FIGO) embarked on a new initiative in 2014 to raise awareness about the link between hyperglycemia in pregnancy (HIP) and poor maternal and fetal outcomes, and the risk to the future health of the mothers with HIP and their offspring. FIGO brought together a group of experts to frame the issues and develop a document suggesting key actions to address the public health burden posed by HIP. The FIGO Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care was launched at the FIGO World Congress in October 2015 in Vancouver and published as a special supplement to the International Journal of Gynecology and Obstetrics⁽¹⁾. The document provides pragmatic guidance for testing, management and care of women with GDM in relation to the resource settings and calls for a clearly defined global health agenda to tackle the issue on a world-wide scale.

PER CONSULTAZIONE

Il documento FIGO: una opportunità per la gestione dell'iperglicemia in gravidanza.

**Commento a cura del Gruppo di Studio
"Diabete e Gravidanza" AMD-SID**

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RIASSUNTO

La International Federation of Gynecology and Obstetrics (FIGO) nel 2014 intraprese una nuova iniziativa per aumentare la consapevolezza relativa all'importante legame esistente tra iperglicemia in gravidanza, outcome materno e fetale avverso, e rischio per la salute futura sia della madre sia del neonato. Il documento FIGO, *"Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care"*, a fronte di differenze nella realtà italiana che evidenzieremo, ha il grandissimo pregio di proporre/avere proposto strategie che effettivamente interpretano il concetto di "Assistenza sanitaria universale" e di affrontare il problema (suggerendo concrete soluzioni) della gestione dell'iperglicemia anche in Paesi a basso reddito. Tale considerazione, oltre al grande rispetto per la completezza del lavoro, deve indurre gli esperti e tutti gli attori coinvolti ai vari livelli a riflessioni per rivedere alcune pratiche prendendo ispirazione proprio da questo documento.

SUMMARY

The FIGO guide: an opportunity for the management of hyperglycemia in pregnancy. Comment by the "diabetes and pregnancy" AMD-SID study group

The increasing incidence of diabetes and obesity worldwide induced the International Federation of Gynecology and Obstetrics (FIGO), in 2014, to launch a new initiative to raise awareness on the important links between hyperglycemia in pregnancy, adverse maternal and fetal outcome, and risks for the future health of both mother and newborn. FIGO prepared a comprehensive document entitled "Initiative on Gestational Diabetes Mellitus (GDM): A pragmatic guide for diagnosis, management, and care" that we comment here.

The FIGO initiative has the great merit of proposing the concept of "universal health care" addressing the question, suggesting workable solutions for the management of hyperglycemia in pregnancy even in low-income countries. Here we compare the FIGO suggestion with the Italian guidelines on GDM screening. While expressing our utmost appreciation for the thoroughness of their work, this should prompt experts and all those involved at every level to review their practices, taking inspiration from this document.



The Establishment of **Institute of Perinatal Research**

Vision

Establishment of an Institute in the area of perinatal and maternal and fetal health research, recognized nationally and internationally as a leading center, that will contribute to sustainable improvement in the health of the future generations.

Focus

The main focus of the **Institute of Perinatal Research** will be on the establishment of a leading research center dedicated to the study of
Pregnancy Induced Complications



Institute of Perinatal Research

Bring

- Bring together multi-disciplinary international expertise and resources

Foster

- Foster national and international collaborations and enthusiasm

Advance

- Advance understanding and treatment of conditions adversely impacting perinatal health

IPHR - FIGO Global Perinatal Research Network

- **First Trimester Clinics**
- **Perinatal Bio Bank**
- **International Academic Research and Training Center**
- **Diagnostics Development Center**
- **Big Data (Clalit Research Institute)**
- **Health economics (Clalit Health Services)**
- **Technology-Transfer (Mor Research Institute - Clalit Health Services)**



Institute of Perinatal Research

Collaborating Hospitals and Perinatal Research Laboratories

Collaborating Hospitals

- Rabin Medical Center, Tel Aviv University , Israel
- Clínic de Barcelona & Sant Joan de Déu, University of Barcelona, Spain
- Azienda Ospedaliero-Universitaria Careggi, University of Florence, Italy
- Medical University of Warsaw, Warsaw, Poland

Collaborating Perinatal Research Laboratories

Small/microRNA-

- Tel Aviv University, Israel

Microbiomics

- Bar Ilan University , Israel
- Florence University , Italy

Metabolomics

- Cagliari University, Italy

Genomics

- Cyprus National Research Center/NIPD, Cyprus

The Placenta

- University of Graz, Austria

The Placenta – Model

- Tel Aviv University, Israel



IDF-FIGO joint symposium



Session title	Presentation Title	Function	Surname	First name
IDF-FIGO joint symposium - Detection and diagnosis of abnormal carbohydrate metabolism during pregnancy		Chair	Hod	Moshe
IDF-FIGO joint symposium - Detection and diagnosis of abnormal carbohydrate metabolism during pregnancy		Chair	Zadikot	Shaukat
IDF-FIGO joint symposium - Detection and diagnosis of abnormal carbohydrate metabolism during pregnancy	Critical evaluation of the gestational diabetes diagnosis	Speaker	McIntyre	David
IDF-FIGO joint symposium - Detection and diagnosis of abnormal carbohydrate metabolism during pregnancy	Why focus on hyperglycaemia in pregnancy is critical for the global diabetes advocacy agenda: the social, public health and economic considerations	Speaker	Purandare	C N
IDF-FIGO joint symposium - Detection and diagnosis of abnormal carbohydrate metabolism during pregnancy	Towards a global consensus - The FIGO initiative on gestational diabetes	Speaker	Hod	Moshe



IDF-FIGO joint symposium



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6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Meet-the-Expert		How to diagnose gestational diabetes		Speaker	Metzger	Boyd E
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Symposium	90	Management of the diabetic pregnancy: medical nutritional therapy and pharmacological therapy during pregnancy		Chair	Hod	Moshe
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Symposium		Management of the diabetic pregnancy: medical nutritional therapy and pharmacological therapy during pregnancy		Chair	Corcoy	Rosa
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6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Symposium		Management of the diabetic pregnancy: medical nutritional therapy and pharmacological therapy during pregnancy	Pharmacological management of diabetic pregnancy: oral hyperglycaemic agents	Speaker	Corcoy	Rosa
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Symposium		Management of the diabetic pregnancy: medical nutritional therapy and pharmacological therapy during pregnancy	Role of ICT and eHealth in diabetic pregnancy	Speaker	Berg	Marie
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Open Forum	45	Prevention of gestational diabetes in high-risk individuals		Chair	Divakar	Hema
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6 0 4 o f 6	Open Forum		Prevention of gestational diabetes in high-risk individuals	The Finnish Gestational Diabetes Prevention Study	Speaker	Koivusalo	Saila
6 0 2 m e 6 0 2 m e 6 0 3 s y 6 0 3 s y 6 0 4 o f 6 0 4 o f 6	Open Forum		Prevention of gestational diabetes in high-risk individuals	The Tianjin Gestational Diabetes Prevention Program	Speaker	Hu	Gang

Take home messages

Hyperglycemia In Pregnancy

- ❖ **The most common medical conditions women encounter during pregnancy**
- ❖ **Is associated with :**
 - ✓ **Leading causes of maternal mortality**
 - ✓ **Higher incidence of maternal morbidity**
 - ✓ **Higher incidence of perinatal and neonatal morbidity**
 - ✓ **Later long term consequences for both mother and child**
- ❖ **Pregnancy offers a window of opportunity to:**
 - ✓ **Establish services**
 - ✓ **Improve health**
 - ✓ **Prevent intergenerational transmission no communicable diseases**



FIGO recommendations

All pregnant women should be tested for hyperglycemia during pregnancy

- ❖ **Universal testing**
- ❖ **A one-step procedure**

Postpartum period as an important platform to initiate early preventive health for mother and offspring who are both at higher risk of:

- ❖ **Future Obesity**
- ❖ **Metabolic Syndrome**
- ❖ **Diabetes**
- ❖ **Hypertension**
- ❖ **Cardiovascular Disorders**



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