

孕兒集

PREGNANCY
TALK

THE NEWSLETTER
FOR MOTHERS

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現在的孕媽媽... Nowadays



孕媽媽都會抱著同一個疑問，這個疑問在十多年前幾乎沒有聽過的 — 應否儲存寶寶的臍帶血？

儲存臍帶血最大的優點是，臍帶血幹細胞具有潛在的醫學用途，將來可為你的寶寶，甚至家人提供治療機會。

準父母可以將儲存臍帶血視為一項健康投資，因為它保障了寶寶和家人的健康和福祉，為全家人帶來幸福的將來。

如欲了解更多關於儲存寶貴珍貴的臍帶血之好處，

可到 www.cordlife.com 瀏覽或

致電 2511-8887 查詢。

是時候為寶寶做一個長遠的健康保障計劃。



Pregnant moms are asked a question barely heard a decade ago; Do you want to save your baby's cord blood?

One major benefit of cord blood banking is, you can definitely capitalize on its potential medical uses later, for your child and maybe for your family as well.

It might just turn out to be an investment worth looking into as it safeguards the family's health and well-being, ultimately instilling hope for a bright future ahead.





Find out more about the benefits on banking your newborn's precious cord blood at www.cordlife.com

or call 2511-8887 today.

It's time to plan long-term.



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寶寶的臍帶血 為何如此珍貴？

What's precious about my baby's cord blood?

全球越來越多父母為自己的寶貴儲存臍帶血，因為臍帶血含有一樣非常珍貴的東西 — 幹細胞。幹細胞是身體最基本的建材，可再生和轉化細胞，從而構成人體各種組織和器官。

醫學上首次使用幹細胞治療，是為患有癌症的病人重建正常的血液和免疫細胞，即是我們所知道的骨髓移植。在八十年代後期，醫學研究發現臍帶血含有的造血幹細胞與骨髓移植使用的造血幹細胞相同，因而把臍帶血幹細胞引進成為骨髓幹細胞以外的另一選擇。

全球首宗臍帶血幹細胞移植手術於1988年進行，直至現在，全球已經有超過20,000宗臍帶血幹細胞移植個案¹。相比骨髓和周邊血，臍帶血幹細胞為現時兒科最常用的幹細胞來源²。

幹細胞可治療的疾病種類不斷增加，目前，幹細胞已經可以治療超過80種疾病³。

為何要儲存臍帶血幹細胞？

隨著年齡增長，人體內的幹細胞亦會老化，因此臍帶血幹細胞是最“年輕”、最“原始”的幹細胞，取得的方法亦不涉及任何倫理和道德的問題。

除了目前的幹細胞移植治療外，醫學界正積極研究利用幹細胞治療其他疾病，包括心臟病、中風、脊髓損傷、腦麻痺、骨科的應用等。這些我們稱之為“細胞療法”的治療，在醫學界已經開始進行多項臨床試驗，拓闊幹細胞應用。

細胞療法是一個迅速發展的領域，有極大的潛能治療許多疾病，包括一些現時醫學科技尚未能治癒的疾病。

美國現時已有二十個州份通過立法，每位孕婦必須被知會有關臍帶血儲存或捐贈的選擇權，以及臍帶血儲存在私營臍帶血庫或捐贈至公營臍帶血庫的原因，而不是僅僅棄掉這些寶貴的幹細胞。

臍帶血的醫學價值已獲醫學界肯定。雖然香港尚未有相關法例，準父母亦應該預早綢繆，以免錯過這個一生一次的珍貴機會，為家人多添一份健康保障。

幹細胞可治療的部份疾病：

惡性疾病（癌症）

- 白血病
- 神經母細胞瘤（神經系統癌症）
- 淋巴瘤（淋巴腺癌症）
- 腎母細胞瘤（腎癌）
- 乳癌

非惡性疾病

- 范康尼貧血
- 再生障礙性貧血
- 地中海貧血（重型）
- 克拉伯病（腦白質營養性萎縮）

Thousands of parents around the world are privately storing their baby's cord blood, as it contains something very precious, these are stem cells. Stem cells are the body's basic building blocks, which can regenerate and turn into the cells that form all of the tissues, organs and systems in the human body.

The first use of stem cells in medicine was to generate healthy blood and immune cells in cancer patients in what we know as a bone marrow transplant. It was discovered in the late eighties that cord blood contains the same hematopoietic (blood) stem cells used for bone marrow transplants and thus the introduction of cord blood stems cells as an alternative source to bone marrow stem cells.

The first umbilical cord stem cell transplantation was performed in 1988, since then over 20,000 cord blood transplants have been performed¹ and today cord blood stem cells is the most commonly used source of stem cells (over bone marrow and peripheral blood)² in the pediatric setting.

The list of diseases that are treatable with stem cells also continues to grow and today, over 80 diseases are treatable using stem cells³.

Why cord blood stem cells?

As we age, so do our stem cells, thus umbilical cord blood stem cells are the “youngest” and most “primitive” stem cells that we can obtain that do not involve obtaining from a source with both ethical and moral implications.

Besides the current indications for stem cell transplants, there has been a huge amount of research involving stem cells for other applications, like heart disease, stroke, spinal cord injury, cerebral palsy, orthopedic applications and others. This research has now led to numerous clinical trials involving various stem cells in the treatment of these diseases in what we term “cellular therapy”.

Cellular Therapy is a rapidly evolving field that holds great promise for the treatment of numerous diseases and also certain diseases where there is currently no medical cure.

The US Government has now passed legislation in over 20 states that all expecting parents should be educated on the options available with regards to the cord blood in their baby's umbilical cord and the reason why they might consider to either store privately or donate these stem cells, rather than just throwing away these precious cells.

Medical value of cord blood has been recognized in the medical field. Although there is no related legislation in Hong Kong yet, expecting parents should prepare well in advance so that they will not miss this once-in-a-lifetime chance to give their families a health protection.



Some diseases treatable with stem cells:

Malignant Diseases (Cancers)

- Leukemia
- Neuroblastoma (Cancer of the nervous system)
- Lymphoma (Cancer of the lymph glands)
- Wilms' Tumour (Kidney Cancer)
- Breast Cancer

Non-Malignant Diseases

- Fanconi's Anemia
- Aplastic Anemia
- Thalassemia (Major)
- Krabbe Disease



Dr. Cherie Daly

康盛人生集團醫療事務主管
康盛人生臍帶血庫

Group Medical Affairs Manager
CordLife

Dr. Cherie Daly在多個醫學範疇具備豐富的臨床經驗，其中在幹細胞方面，已有超過6年的相關經驗。Dr. Daly是沙特阿拉伯Cryo-Save的前任行政經理，負責在迪拜建立和管理新臍帶血實驗室。在海灣地區工作期間，Dr. Daly曾向當地政府進行游說，並聯同當地主要區域學院教育和引進臍帶血儲存概念到海灣地區的準父母，當時當地並無此項服務。

自2009年起，Dr. Daly擔任康盛人生集團醫療事務主管。

Dr. Cherie Daly is a qualified medical practitioner who has clinical experience in numerous fields. She has over 6 years of international experience in the stem cell industry. Dr. Daly served as the Executive Manager for Cryo-Save Arabia, where she was responsible for establishing and managing their new cord blood laboratory in Dubai. During her time in the Gulf Region, Dr. Daly lobbied at the Government level and with key regional institutes to educate and introduce cord blood banking to expectant parents in a region where there was no such service.

Since 2009, Dr. Daly is the Group Medical Affairs Manager for CordLife in Singapore.

Reference:

- i : 'Cord Blood Forum' website. (<http://www.cordbloodforum.org/biblio/childtx/malignant.html>).
- ii : 'National Marrow Donor Program' website. (www.marrows.org).
- iii : 'Parent's Guide to Cord Blood Banking' and 'Cord Blood Registry' Website. (www.parentsguidecordblood.org), (www.cordblood.com).



最佳儲存臍帶血方法： 氣態氮或液態氮？

The Best Cord Blood Storage Method: Vapour or Liquid Nitrogen?

儲存臍帶血跟投資保險相似，前者為健康作投資，後者為財富作投資。要有理想回報，買家必須選擇適當的投資工具，也就是臍帶血庫所採用的處理及儲存臍帶血的設備。業界現有兩種儲存方式，分別是氣態氮及液態氮：

「氣」態氮及「液」態氮比較表一覽

	「氣」態氮	「液」態氮
媒介特性	氣態並非理想媒介傳播病菌，能有效杜絕臍帶血樣本交叉感染風險，衛生得到保障	報告顯示具傳染性的生物如乙型肝炎病毒可於液態氮中生存 ¹ ，構成交叉感染風險
交叉感染紀錄	無交叉感染紀錄	文獻記載受污染的液態氮儲存缸曾傳播病毒 ¹¹
儲存溫度*	達-190°C	達-196°C

*低溫冷藏的定義為低於玻璃轉化溫度(Tg)，即-134°C以下；因此，只要臍帶血幹細胞儲存於-134°C以下，低溫冷藏狀態維持不變。

越多臍帶血庫採用的儲存缸，代表其在業界的認受性越高。現時全球超過99%的私人臍帶血庫包括美國儲存量最大的兩間臍帶血庫 Cord Blood Registry及Viacord均採用氣態氮缸；大部分的公營臍帶血庫則採用液態氮缸。消費者應如何選擇？氣態氮缸揭蓋式設計能讓工作人員監測及安放臍帶血樣本，因此私營臍帶血庫會首選氣態氮缸以保證可取回屬於客人的臍帶血樣本。反之，液態氮缸密閉式的設計，不能透視缸內是否如常運作。

另外，查看回收紀錄同樣重要。MVE及BioArchive™分別是香港臍帶血庫所採用的氣態氮缸和液態氮缸。MVE無須依賴電力操作，而BioArchive™則需依靠電力運作和電腦控制。於2008年BioArchive™因有漏電危險，曾被美國食物及藥物管理局宣佈公開回收。一般而言，當機械遇上低溫或液體時，不論機件是否防水都會容易故障。值得存疑的是若儲存缸單靠電動機械臂操作，它的機件於-196°C的低溫下操作長達18年的儲存年期後，真的仍能如常運作？依靠電腦控制亦帶來電腦失靈、黑客入侵等問題。

分析儲存臍帶血的設備只是選擇臍帶血庫的其中一環，當然還要注意臍帶血庫的處理設備、公司背景及客戶移植經驗等各方面。



▲ BioArchive™ 液態氮缸

▲ MVE 氣態氮缸

Reference:

- i: Saritha KR, Bongso A. 2001. Comparative Evaluation of Fresh and Washed Human Sperm Cryopreserved in Vapor and Liquid Phases of Liquid Nitrogen. Journal of Andrology. 22(5):857-862.
- ii: International Society for Biological and Environmental Repositories. 2005. Best Practices for Repositories I: Collection, Storage, and Retrieval of Human Biological Materials for Research. Cell Preservation Technology. 3(1):5-48.

Cord blood banking is similar to buying financial insurance. The former is a kind of health investment while the later is a kind of financial investment. To ensure a satisfactory return, the buyer must select proper investment vehicles, which are cord blood processing and storage equipments used in cord blood banks. Today, two types of storage methods are available in the industry—vapour nitrogen and liquid nitrogen:

Comparison chart of vapour nitrogen versus liquid nitrogen

	Vapour Nitrogen	Liquid Nitrogen
Media characteristics	Gas is not a media for bacteria transmission, thus it completely eliminates the risk of cross-contamination between cord blood samples. Vapour nitrogen is more hygienic.	Recent reports indicate infectious organisms such as hepatitis B viruses shown to survive in liquid nitrogen ¹ that constitutes the risk of cross-contamination.
Record of cross-contamination	No record of cross-contamination found.	Documented diseases transfer via contaminated liquid nitrogen ¹¹ .
Storage temperature*	-190° C	-196° C

*Definition of cryopreservation is storage under Glass Transition Temperature (Tg) i.e. below -134° C. Thus, cord blood stem cells remain at cryopreservation condition as long as they are stored under -134° C.

The more cord blood banks use the storage method, the higher recognition of that system in the industry. Today, over 99% of private cord blood banks worldwide including Cord Blood Registry and Viacord use vapour freezers only, while the majority of public cord blood banks use liquid freezers. Which one should consumers choose? Vapour freezer's lid design assures operator can monitor and arrange cord blood samples properly. That is why private cord blood banks prefer vapour freezer to ensure clients' unique cord blood samples can be retrieved in the future. Conversely, liquid freezer's closed design does not allow monitoring inside the freezer.

It is also important for consumers to check any recall record of the freezer used. "MVE" and "BioArchive™" are the vapour freezer and liquid freezer respectively commonly used in Hong Kong's cord blood banks. The MVE vapour freezer does not rely on electricity to operate. Operator can obtain the samples easily. BioArchive™ liquid freezer relies on the power to operate and is controlled by computer. In 2008, US FDA announced recalls of BioArchive™ due to the possibility of electrical shock. Generally, machine failure is common when machine soaked in liquid or under low temperature regardless it is waterproof or not. If a freezer can only operate by a computerized mechanical robotic arm, it is questionable whether it can still operate well after 18-year storage period under -196 °C. Also, computer control comes along with computer failure and hacking issues, etc.

Cord blood storage freezer is one of the aspects parents should consider when choosing a cord blood bank. They should also evaluate other factors such as different cord blood banks' processing technology, company background and transplant record, etc.



為懷孕做好準備

Get prepared for your Pregnancy

香港人結婚年齡愈來愈遲，因此亦比以前較遲懷孕。香港人結婚年齡推遲的原因，可能是因教育水平的轉變、工作性質、社會經濟環境或整個社會的價值觀有所改變。所以如果夫婦正準備組織家庭，應該注意以下事項以確保能順利懷孕和嬰兒在最佳狀態出生。

People in Hong Kong are getting married late and having pregnancy at an older age than before. This may be related to the change in education, career structure, socio-economic climate and value of society at large. Before couples embark on a pregnancy they should check on the following to ensure that the pregnancy will be smooth and the baby born in the best optimal condition.

孕前檢查

準備組織家庭的夫婦建議先進行婚前或孕前檢查，以發現任何懷孕前隱匿性疾病。這對於在香港常見的遺傳性疾病如地中海貧血尤為重要。隱匿性感染如衣原體感染應及早妥善處理，以減少不孕和宫外孕的機會。

一般的婚前健康檢查項目包括：

- | | |
|----|--|
| 女性 | <ul style="list-style-type: none"> ● 體格檢查、骨盆檢查及子宮頸塗片 +/- 衣原體檢查 ● 全血計數，平均紅血球體積(MCV)：以確定是否有貧血或地中海貧血 ● 愛滋病、梅毒、風疹、乙型肝炎表面抗原的血液檢查 |
| 男性 | <ul style="list-style-type: none"> ● 體格檢查 ● 血全像、平均紅血球體積 (MCV)、愛滋病、梅毒血清檢驗 ● 精液分析 |

地中海貧血的夫婦（如雙方都擁有地中海貧血特性），應在決定懷孕前進行產前診斷的諮詢，這將有助於他們了解產前診斷地中海貧血的嬰兒的重要性和做好準備工作。

決定懷孕時間

由於香港人結婚年齡愈來愈遲，他們應盡早決定生育的時間，而不是等待太長時間，然後才考慮懷孕或尋求生育意見。婦女在40歲之後，生育能力將會迅速下降，所以夫婦應在40歲之前計劃懷孕。如果夫婦如常房事未能在一年之內成孕，應及早徵詢婦科醫生的專業意見。簡單的治療如氯米芬(clomiphene，促進排卵的藥物)可增加婦女的成孕機會。

懷孕前應注意的事項

男性應在準備計劃生育前停止吸煙，因為男性吸煙會降低精子質量，造成受孕障礙。為了增加自然成孕的機會，夫婦可以透過檢查基礎體溫圖表(BBT)或使用黃體刺激素檢驗盒，以確定排卵時間。

婦女應在懷孕前1個月至懷孕14週內攝取足夠葉酸(folate)。多項研究證實，服用葉酸的孕婦，胎兒神經管缺陷的機率降低。

良好的體重管理也很重要。肥胖可能影響成功懷孕的機會，並增加妊娠糖尿病的風險，所以體型肥胖的婦女，應在計劃懷孕前減輕體重。

疫苗接種，包括風疹疫苗，HPV疫苗和季節性流感疫苗應遠在懷孕以前。婦女在接種HPV疫苗期間如不幸發現懷孕，必須產後才給予後續劑量。

如準媽媽在懷孕前患有糖尿病、高血壓、癲癇症、心臟病等，必須在懷孕前穩定其病情，並由內科醫生和產科醫生共同跟進病情。如果孕前疾病沒有受到很好控制，如糖尿病，母親和胎兒發生狀況的幾率較高（先天性畸形）。

懷孕前應避免的事項

吸煙和飲酒，會對寶貴的發育有害，應避免。有強烈的醫學數據表明，吸煙會增加流產的機會、宮外孕、早產、胎兒發育遲緩、胎兒夭折及長期發育問題，所以打算懷孕的婦女必須停止吸煙。在香港，懷孕時喝酒雖然不是一個普遍的情況，但數據顯示在懷孕時喝酒的習慣有上升的趨勢。喝酒跟吸煙不同，酒精份量的多少與胎兒受損的程度無關。所以為了寶貴的健康著想，婦女應把吸煙和飲酒的習慣一同戒掉。

女性在生育年齡應盡可能避免進行X光檢查。

在香港，服用中藥和飲用草藥茶是常見的，但懷孕婦女應該盡量避免服用藥物和草藥，以免影響胎兒。另外，狗和貓尤其是糞便，可能含有病毒如弓形蟲，因此懷孕婦女應盡量避免直接接觸動物。

準備懷孕是婦女人生中相當重要的過程，因此婦女必須在懷孕前清楚知道可做/不可做的事情。如果有任何疑問，可隨時諮詢產科/婦科醫生。



Prepregnancy check up

It is always advisable to have premarital or pre-pregnancy check up to discover for any occult disease before pregnancy. This is particular importantly for those genetic diseases like thalassemia which is common in Hong Kong. Occult infection like Chlamydia infection should be treated properly to decrease the chance of infertility and possible ectopic pregnancy.

The following items are usually included in the premarital check up package

- | | |
|--------|---|
| Female | <ul style="list-style-type: none"> — physical examination, pelvic examination and a pap smear +/- Chlamydia swab — complete blood count, MCV: to check for any anameia, thalassemia — blood for HIV, syphilis, rubella and hepatitis B surface antigen |
| Male | <ul style="list-style-type: none"> — physical examination — blood for complete blood picture, MCV, HIV, syphilis — semen analysis |

Thalassemia couple (i.e. both partners have thalassemia trait) should be referred to prenatal diagnosis counseling before embarking on pregnancy. This will help them to understand the importance and logistics of prenatal diagnosis of thalassemia baby.

Time to get pregnant

As couple is getting married late, they should decide on the pregnancy early and not to wait for too long before considering pregnancy or seeking fertility advice. Fertility declined rapidly after the age of 40 and if couple wishes they should embark on pregnancy before this age. Failing to get pregnant within one year of regular intercourse should be reason to consult gynaecologist for opinion. Simple treatment like clomiphene (drugs to induce ovulation) may sometimes help.

What should be done before pregnancy

The husband should stop smoking before pregnancy as smoking decreases the quality of sperm thus causing

subfertility. In order to have the highest chance of spontaneous pregnancy, couple can check for the basal body temperature (BBT) chart or use the LH surge kits to ascertain time of ovulation.

Folate should be taken a month prior to conception and continued till 14 weeks of pregnancy. Multiple studies confirmed the reduced incidence of fetal neural tube defect in women taking folate.

Management of body weight is also important. Gross obesity may affect the chance of pregnancy and increases the chance of diabetes in pregnancy, thus weight reduction may be needed.

Vaccination should be considered well before pregnancy including rubella vaccination, HPV vaccination and seasonal flu vaccination. In the unfortunate situation when a woman fall pregnant while receiving the HPV vaccination, the subsequent doses should be postponed after pregnancy

If the mother to be is suffering from pre-existing illness like diabetes, high blood pressure, epilepsy, heart disease etc, her primary disease should be stabilized and best managed jointly by a physician and an obstetrician. When her primary disease e.g. diabetes is not well control, there is a higher chance of problem in the mother and the baby (congenital abnormality)

Things to avoid before pregnancy

Smoking and drinking alcohol are harmful for development of the baby and should be avoided. There is strong evidence that smoking can increase the chance of abortion, ectopic pregnancy, preterm labour, growth restriction, neonatal sudden death and long term development problems and women intending to become pregnant should stop smoking. Although drinking is not a major problem in Hong Kong, there is an increasing trend of alcohol use in Hong Kong. Unlike smoking, there is not a dose dependent relationship between the amount of alcohol used and the degree of fetal damage, so it is safest to abstain from alcohol all together.



Women in the reproductive age should avoid having X-rays as far as possible.

In Hong Kong, the use of traditional Chinese medicine and herbal tea are common. Women should if possible try to avoid the medicine and herbs if possible to avoid affecting the fetus. Dogs and cats especially the stool may be contaminated with virus like toxoplasmosis and women should try to avoid direct contact with the animals.

Preparation for pregnancy is a major life event of women and they should be well aware of the do and don't do before pregnancy. If there is any doubt, they can always consult the OB/GYN doctor.



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林兆強醫生於1985年畢業於香港大學醫學系內外全科醫學士，並隨後獲頒授以下的專業資格：英國皇家婦產科醫學院榮授院士、香港婦產科醫學院院士、香港醫學專科學院院士(婦產科)、愛爾蘭皇家醫學院兒科文憑。林醫生曾在香港和英國多家醫院任職婦產科專科醫生，亦是香港婦產科學會的前任主席。林醫生為現任香港陰道鏡檢查及子宮頸病理學會主席。

林醫生為多本專業婦產科刊物擔任編輯，包括中華婦產科雜誌、婦幼臨床醫學雜誌、香港婦產助產學雜誌、產科和助產學雜誌等。

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He is editors of many reputed professional journals like the Chinese Journal of Obstetrics and Gynaecology, the Journal of Obstetrics Gynaecology and Paediatrics, Hong Kong Journal of Gynaecology, Obstetrics and Midwifery etc.



胎兒異常 染色體產前篩查

Antenatal screening tests for fetal chromosomal abnormalities

胎兒異常染色體篩查是產前檢查的一個重要部分。所有孕婦都應該向醫生諮詢有關服務。

從歷史上看，孕婦的年齡一直被視為是胎兒異常染色體風險的決定因素。這是基於診斷測試而導致流產的機會率，只有年齡超過35歲的孕婦才提供遺傳諮詢和羊膜穿刺診斷。儘管如此，在患有唐氏綜合症的嬰兒（三染色體21）的個案中，只有20%的個案是由年齡超過35歲的孕婦所生。

因此，所有孕婦都應該在懷孕20週前接受有關胎兒異常染色體的篩查及診斷性測試。新的篩查方法研究給孕婦提供更多的選擇。所有孕婦均應獲得產前綜合諮詢，同時亦需考慮到孕婦的意願。隨著早孕期檢測的出現，孕婦便可盡早選擇認為最佳的檢查方法。

進行產前篩查的好處包括能夠盡早準確診斷異常胎兒、減少入侵性診斷測試的次數，及降低正常胎兒因入侵性診斷測試而導致流產的風險。而篩查的缺點是，並非所有異常染色體的胎兒都能被檢測出來。降低篩查的風險及增加安全性是最關鍵的。

診斷性測試包括早孕期的絨毛球活檢和中孕期的羊膜穿刺術。絨毛球活檢（CVS）是在懷孕10至14週抽取胎盤組織。這種絨毛球活檢取樣測試存在0.6%至4.6%的流產風險，而其胎兒細胞遺傳學分析率則達97.8%。CVS的主要優點是能夠於早孕期準確進行染色體分析。

CVS是透過孕婦腹部或經子宮頸取得樣本；經子宮頸取得樣本的方法存在較高的流產風險，較適用於位於子宮後壁的胎盤或腸道阻礙不宜進行腹部取樣的孕婦。

雖然CVS可能導致截肢缺陷，但目前的醫學數據表明，在懷孕10至14週間進行CVS，胎兒截肢缺陷的風險與一般人群相比，並不存在顯著差異（一般為每10,000名胎兒有6名有截肢缺陷）。反之，若在懷孕10週前進行CVS，胎兒截肢缺陷的風險則會上升至1到2個百分點。

羊膜穿刺術是在超聲波引導下，穿刺針經羊膜囊抽取羊水。羊膜穿刺術在懷孕16至18週間進行，導致流產的機會為1/370至1個百分點，而其胎兒細胞遺傳學分析率則達99.4%。

羊膜穿刺術引致的併發症包括胎兒流產，或較罕見的陰道出血、羊水滲漏、絨毛膜羊膜炎、胎兒細胞無法生長及檢測或胎兒被針刺傷。

香港普遍的產前篩查方式： 早孕期

早孕期進行產前篩查的優點是能及早得到篩查結果，以便進行更準確的診斷性測試。如有需要，可以在早孕期終止妊娠，會有較低的終止妊娠風險。

‘早孕期一站式唐氏綜合症篩查’（OSCAR）包括量度胎兒後頸皮下透明層的厚度，及檢驗孕婦血液中的妊娠性血漿蛋白-A（PAPP - A）和人類絨毛膜促性腺激素（hCG）。

胎兒後頸皮下透明層的厚度，是以標準超聲波測量胎兒後頸。該單項測試不完全準確，唐氏綜合症有效檢測率約為70%至71%，有3.5%至5%的假陽性率。

若胎兒後頸皮下透明層的厚度超過3.5毫米，也有可能與主要的先天性心臟缺損、大血管缺損、先天性畸形、發育不良、變形、分裂、和其他綜合症有關。如出現不正常的後頸皮厚度，必需作進一步的檢測，如胎兒詳細結構性超聲波或胎兒心臟超聲波檢查。

‘早孕期一站式唐氏綜合症篩查’（OSCAR）對唐氏綜合症的檢測率為78.7%至89%，亦同時存在5%的假陽性率；愛德華綜合症（三染色體18）的檢測率則為90%，和2%的假陽性率。

血清PAPP - A和人類絨毛膜促性腺激素hCG水平過低，關連不良懷孕，包括流產、妊娠高血壓、先兆子癇、胎膜早破、胎盤早剝離、早產、出生體重過低和死胎。

胎兒後頸皮下透明層的厚度測試和血清測試可在懷孕不同孕期進行，但沒有早孕期一站式的檢測準確度那麼高。

中孕期

(1) 三標記篩檢法

三標記篩檢法包括血清甲胎蛋白、絨毛膜促性腺激素和游離雌三醇測試。其唐氏綜合症檢測率有69%，存在5%的假陽性率。甲胎蛋白（AFP）水平上升也可能反映不良懷孕。

(2) 超聲波掃描

超聲波掃描有時會被用作檢查唐氏綜合症及其他染色體異常。超聲波的某些發現（有時稱為軟標記）可以令醫生懷疑胎兒可能患有唐氏綜合症。軟標記結果，在其本身而言，不會為胎兒造成任何問題，但可能表明胎兒有潛在的染色體異常。

唐氏綜合症的軟標記包括 (但不限於以下特徵)：

- 胎兒後頸皮下透明層厚度增加
- 鼻骨缺失
- 股骨長度較短
- 脈絡叢囊腫
- 心室內強回音點
- 腸管強回聲
- 腎盂擴張



重要的是要記住，被發現有以上任何一種特徵的大部份胎兒，最終被證明是沒有潛在染色體異常的完全健康的嬰兒。超聲波只是一個篩選檢驗，不能斷定胎兒患有唐氏綜合症或其他染色體異常。

另一方面需要提醒孕婦，至少有三分之一的唐氏綜合症是不能從超聲波掃描中檢測到的。

最後，經篩查檢測到高風險的孕婦，應接受遺傳諮詢，絨毛球活檢或羊膜穿刺術診斷檢查。



Screening for fetal chromosomal abnormalities is an essential part of antenatal care. All pregnant women should have access to counseling.

Historically, maternal age was the determinant of risk. Women older than 35 years at the time of delivery were offered genetic counseling and amniocentesis because of procedure-related loss rates. However, only 20 percent of infants with Down syndrome (Trisomy 21) are born to women older than 35 years.

Therefore, pregnant women of all ages should be offered screening and invasive diagnostic testing for chromosomal abnormalities before 20 weeks' gestation. New developments in screening methods have increased the number of options for patients. Comprehensive counseling should be available to all pregnant women. Patient preference should also be considered. With the advent of first-trimester options, patients will need to choose early and be comfortable with their choice.

The advantages of antenatal screening include increasing the odds of identifying an abnormal fetus and reducing the number of invasive diagnostic tests and procedure-related losses of normal fetuses. The disadvantage of screening is that not all aneuploid fetuses are identified with screening. Minimizing the risk of the screening and maximizing safety is crucial.

Diagnostic options include chorionic villus sampling in the first trimester and amniocentesis in the second trimester.

Chorionic villus sampling (CVS) at 10 to 14 weeks' gestation allows for sampling of the placental tissue. It has a 0.6% to 4.6% risk for fetal loss and a 97.8% cytogenetic diagnosis rate. The main advantage of CVS is early and definitive chromosomal analysis.

CVS may be performed by a transabdominal or transcervical approach; the transcervical approach has a

higher incidence of spontaneous pregnancy loss but may be preferred if the placenta is posterior or if the bowel prevents a transabdominal approach.

Although there have been concerns that CVS leads to limb reduction defects, current data suggests that when performed between 10 and 14 weeks' gestation, there is no significant difference from the incidence in the general population (6 in 10,000). CVS performed before 10 weeks' gestation increases the risk of limb reduction defects to 1 to 2 percent.

During amniocentesis, a needle is inserted into the amniotic sac using ultrasound guidance, and amniotic fluid is aspirated. Amniocentesis at 16 to 18 weeks' gestation has a 1 in 370 to 1% risk for fetal loss and a 99.4% cytogenetic diagnosis rate.

Complications of amniocentesis may include fetal loss and, uncommonly, vaginal spotting, amniotic fluid leakage, chorioamnionitis, failure of fetal cells to grow in culture, and fetal needle injury.

Common screening options in Hong Kong: In the first trimester

First-trimester screening affords the advantage of early diagnosis so that confirmatory testing can be undertaken. If desired, termination can be performed at an early gestational age, allowing greater privacy and less risk.

OSCAR test includes nuchal translucency testing in combination with measurement of pregnancy-associated plasma protein A (serum PAPP-A) and human chorionic gonadotropin (hCG).



Nuchal translucency, or thickness of the fluid under the skin of the fetal neck, is measured by standardized ultrasonography of the posterior fetal neck. Nuchal translucency testing alone is not as effective and detects approximately 70% to 71% of Down's syndrome, with a 3.5% to 5% false-positive rate.

Nuchal translucency more than 3.5 mm is linked with major congenital heart defects, defects of the great vessels, malformations, dysplasias, deformations, disruptions, and syndromes. Abnormal nuchal translucency warrants diagnostic testing such as targeted ultrasonography or fetal echocardiogram.

OSCAR test has a 78.7% to 89% detection rate, with a 5% false-positive rate for Down's syndrome and a 90% detection rate with a 2% false-positive rate for trisomy 18.

Low PAPP-A and hCG levels are linked with adverse pregnancy outcomes, including spontaneous loss before fetal viability, gestational hypertension, preeclampsia, preterm premature rupture of membranes, placental abruption, preterm birth, low birth weight, and stillbirth.

Nuchal translucency testing and serum screening can be performed in multiple gestations, but they are less sensitive than first-trimester screening in singleton gestations.

In the second trimester

(1) Serum screening using triple screening

The triple screen of serum AFP, hCG, and unconjugated estriol testing has a 69% detection rate and a 5% false-positive rate for Down's syndrome.

Isolated elevated AFP levels are linked with a greater risk for poor pregnancy outcomes.

(2) Ultrasonography

Ultrasound is sometimes used as a screening test for Down syndrome and other chromosome abnormalities. Certain findings (sometimes called soft markers) on an ultrasound may make one suspicious that the fetus may have Down syndrome. Soft markers are findings that, in and of themselves, won't cause the baby any problems but might indicate that the baby has an underlying chromosome abnormality.

Soft markers for Down syndrome include (but are not limited to):

- Increased nuchal translucency
- Absent nasal bone
- Shortened femur length
- Choroid plexus cysts
- Intracardiac echogenic foci
- Echogenic bowel
- Dilated renal pelvis

It is important to remember that most babies found to have one of these markers turn out to be perfectly healthy babies with no underlying chromosome abnormalities. Ultrasound is just a screening test and cannot diagnose Down syndrome or other chromosome abnormalities.

On the other hand, mothers should be reminded that at least a third of the instances of Down syndrome will be missed by using ultrasound alone.

Genetics counseling and chorionic villus sampling or amniocentesis should be offered to women with elevated risk from various screening tests.



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吳崇傑醫生在1990年畢業於香港大學醫學院。經過一年的實習，他一直從事於婦產科專業的醫療工作。他分別於1996年和1997年取得英國皇家婦產科學院和香港婦產科學院的會員資格。他於2004年於英國倫敦大學國王學院哈里斯生產權研究中心接受關於母胎醫學的海外培訓。其後，他在2005年獲香港婦產科學院頒發母胎醫學專家資格。

Dr. Ng graduated from the Faculty of Medicine of University of Hong Kong in 1990. After the one-year internship, he has been practising in the specialty of Obstetrics and Gynaecology. He obtained the qualifications of Member of Royal College of Obstetrics and Gynaecology and Member of Hong Kong College of Obstetrics and Gynaecology in 1996 and 1997 respectively. He received overseas training in the field of Maternal-Fetal Medicine in Harris Birthright Centre for Fetal Medicine in King's College, London in 2004. Subsequently he was granted subspecialist accreditation in Maternal-Fetal Medicine in 2005.

子宮纖維瘤和卵巢囊腫 是女性生殖系統 最常見的兩種腫瘤

Uterine fibroid and ovarian cyst are the two commonest tumours of the female reproductive system



子宮纖維瘤，子宮的良性腫瘤，是女性生殖道最常見的腫瘤。約有20%的女性會有臨床表現。它可引起明顯的臨床症狀，如月經過多、壓迫癥狀、疼痛和生殖功能紊亂。當中有些婦女並沒有臨床病徵，可能會在例行婦科檢查中發現。子宮纖維瘤的病因尚不明確，但其增長可能與雌激素有關。婦女可以透過盆腔超聲波掃描診斷出這種疾病。

子宮纖維瘤的主要治療方法是外科手術。然而，最佳的治療方案應根據臨床症狀、纖維瘤的大小、位置、數量和病人保留子宮和生育能力的意願去制定。對於較小無症狀的子宮纖維瘤，採用超聲波監控的保守治療。子宮切除術（切除整個子宮），當然，是最終的治療，但對於想保存生育能力的婦女來說，並不是最佳的選擇。子宮肌瘤剔除術（切除纖維瘤），較適用於要保留子宮的婦女。然而，會有復發的機會和需作進一步的干預。子宮肌瘤剔除術可以根據子宮纖維瘤的位置、大小或數量，通過腹腔鏡，宮腔鏡或開腹手術進行。

腹腔鏡肌溶解術和子宮動脈栓塞術是較新式的替代療法，適用於希望保留子宮的婦女。總括而言，各種治療子宮纖維瘤的方法都有不同的利弊，必需作出個別評估以及諮詢婦科醫生，選擇最佳治療方案。

卵巢囊腫，卵巢內囊性生成物，通常都是無症狀的。但當囊腫增大至某種程度後，會令婦女出現壓迫癥狀，腹痛和腹脹等，很大可能與腹水有關（惡性病變）。除此之外，一些癥狀與卵巢囊腫的併發症如卵巢扭轉、囊腫破裂和出血有關。在這種情況下，可能會發生突然的劇烈疼痛和休克。

卵巢囊腫可分為良性和惡性。在生育年齡常見以下幾種良性卵巢囊腫：

1. 生理性卵巢囊腫

它是育齡婦女最常見的卵巢囊腫。出現的原因是卵泡增大。大多數案例沒有明顯徵狀，可以自發消失。因此，可採用超聲波監測的保守治療。有時，囊腫發生破裂或出血會導致疼痛。

2. 子宮內膜異位囊腫

子宮內膜異位囊腫即是所謂的‘朱古力瘤’。這是由於子宮內膜組織（子宮內層）侵入卵巢，形成囊腫。常見的臨床症狀是經痛（月經期間的疼痛）。

3. 皮樣囊腫（畸胎瘤）

皮樣囊腫含多種結構，包括頭髮、牙齒、脂肪、骨骼和軟骨。皮樣囊腫的病因仍然不明。它通常是無症狀的，但當扭轉或破裂時可以引起疼痛。

由於過晚診斷，卵巢癌是婦女癌症中常見的死亡原因之一（佔婦女的癌症死亡率約5%）。因為大多數情況下，卵巢癌在早期階段均無症狀，而且現時沒有好的卵巢癌篩查檢測。

像子宮纖維瘤，治療卵巢囊腫主要方法是外科手術，根據不同的性質、大小、有無併發症或懷疑癌症，決定實施保守治療或外科手術。手術可分為囊腫切除術（切除囊腫），卵巢切除術（切除囊腫和整個卵巢）或子宮全切除術合併雙側卵巢切除術（切除子宮和雙側卵巢）。

子宮纖維瘤和卵巢囊腫是婦科常見的兩種疾病，它們在早期階段通常都是無症狀的。為了盡早發現疾病，強烈建議進行定期婦科檢查和盆腔超聲檢查。



Uterine fibroids, benign tumour of uterus, is the commonest tumour of the female genital tract. They are clinically apparent in 20% of women. It can cause significant clinical symptoms such as heavy menstruation, pressure symptom asymptomatic and may be discovered during routine gynaecological examination. The aetiology of uterine fibroid remains unknown but its growth may be related to estrogen. The diagnosis can be confirmed by pelvic ultrasound scan.

Surgery is the mainstay treatment of uterine fibroid. However, the optimal choice of management depends on the presenting symptom, size, location and number of fibroid, patient's desire to retain uterus and fertility. For small asymptomatic fibroid, conservative management with ultrasound monitoring can be adopted. Hysterectomy (removal of the whole uterus), of course, is the definitive treatment but is not optimal choice for the women who wish to preserve fertility. Myomectomy (removal of fibroid) is a preferred option for women who wish to preserve uterus. However, there is chance of recurrence and further intervention. The operation can be performed via laparoscopy, hysteroscopy or laparotomy which depends on the location, size and numbers of fibroids.

Laparoscopic myolysis and uterine artery embolization are the relatively new alternative therapies to selected women who wish to preserve uterus.

In short, there are various treatment options for fibroid with their own benefits and limitations. The best therapy should be assessed individually with women and their gynaecologists.

Ovarian cyst, cystic growth from ovaries, is commonly asymptomatic. They are usually diagnosed when they enlarge to such extent to cause pressure symptoms, abdominal pain and distension, which may be associated with ascites (malignant change). In addition, symptoms may be related to the complications of ovarian cyst such as torsion, rupture and bleeding from the cyst. Under these circumstances, sudden onset of severe pain and shock may occur.

Ovarian cysts can be divided into benign and malignant. For benign cyst, there are several common ovarian cysts especially during reproductive age.

1. Physiological ovarian cyst

It is the commonest ovarian cyst in reproductive women. It is due to enlargement of the follicle. It is asymptomatic in majority of cases and can be resolved spontaneously. Therefore, it can be managed conservatively by monitoring with ultrasound. Sometimes it can cause pain due to rupture or of hemorrhage into cyst.

2. Endometriotic cyst

It is so-called 'chocolate cyst'. It is due to the invasion of endometrium (inner lining of uterus) to the ovaries forming a cyst. The common clinical symptom is dysmenorrhoea (pain during menstruation).

3. Dermoid cyst (teratoma)

It contains various structures including hair, tooth, fat, bone and cartilage. The cause remains unknown. It is usually asymptomatic, but it can cause pain when torsion or rupture occurs.

Ovarian cancer is a common cause of cancer deaths (about 5%) in women because of late diagnosis. In early stage, it is asymptomatic in most of cases. In addition, there is no good screening test for ovarian cancer.

Like fibroid, surgery is the mainstay treatment for ovarian cyst, Depending on the nature, size, presence of complication and suspicion of cancer, the cyst can be managed conservatively or by surgery. The operation can be performed as cystectomy (removal of cyst), oophorectomy (removal of cyst, together with the whole ovary) or total hysterectomy with bilateral oophorectomy (removal of uterus and ovaries).

Uterine fibroid and ovarian cyst are the two common gynaecological problems and they are usually asymptomatic during early stage. Therefore, regular routine gynaecological check-up with pelvic ultrasound examination is highly recommended to have early detection.



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