



TMU-Research Center of Urology and Kidney Monthly Meeting

Times : **2024/7/11(Thursday) 11:00-12:00**

Google meet link : <https://meet.google.com/hpn-vxie-bvs>

Meeting Chairperson : Kuan-Yu Hung

Participant :

【TMUH】Ming-Che Liu、Yao-Chou Tsai、Shauh-Der Yeh、Chien-Chih Wu、Hsiao-Yu Lin、Jeng-Cheng Wu、Ching-Hsin Chang、Wei-Chieh Chen、Fang-Yu Ku、Shih-Hsiu Lo、Te-Chao Fang、Hsi-Hsien Chen、Yen-Chung Lin、Chih-Chin Kao、Ching-Yi Chen、Shu-Ching Yeh、TING-EN TAI

【WFH】Yu-Ching Wen、Liang-Ming Lee、Ke-Hsun Lin、Yung-Wei Lin、Chi-Hao Hsiao、Syuan-Hao Syu、Chung-Howe Lai、Chih-Chen Hsu、Tso-Hsiao Chen、Yuh-Mou Sue、Cho-Hsing Chung、Chung-Yi Cheng、Chung-Te Liu、Yun-Hong Yang、Ming-Che Lee、Yueh-Lin Wu

【SHH】Mai-Szu Wu、Chia-Chang Wu、Chia-Hung Liu、Yi-Te Chiang、Kai-Yi Tzou、Wei-Tang Kao、Su-Wei Hu、Wen-Ling Wu、Mei-Yi Wu、Lie-Yee Hung、Cai-Mei Zheng、I-Jen Chiu、Yu-Wei Chen、Chia-Te Liao、Cheng-Hsien Chen、Hui-Wen Chiu、Po-Han Yu、I-Wen Wu、Tze-Wah Kao、Kuan-Hung Lin

【SKMH】Yung-Ho Hsu、Chu-Lin Chou

Chief : Mai-Szu Wu (President, TMU)、Yen-Hua Huang (Dean, Research and Development, TMU)、Chih-Cheng Hsu (Professor, NHRI)、Ke-Hung Tsui (Vice President, SHH)、Shing-Hwa Lu

Agenda : 1. Metabolic diseases
2. Kidney Transplant Team
3. Functional urological team




臺北醫學大學
 TAIPEI MEDICAL UNIVERSITY



臺北醫學大學
泌尿腎臟研究中心
TMU Research Center
Urology and Kidney

代謝性疾病-整合基因與暴露體學

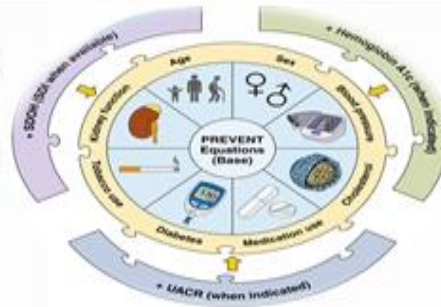
報告人：吳逸文 副教授

113年07月11日

Genetic testing and personalized risk stratification are conspicuously absent in the current guideline



陳女士，50 歲，因糖尿病性腎病變開始透析治療



3 位親戚亦曾經接受透析治療



Prediction of CVD
C-statistics: 0.757 to 0.813,



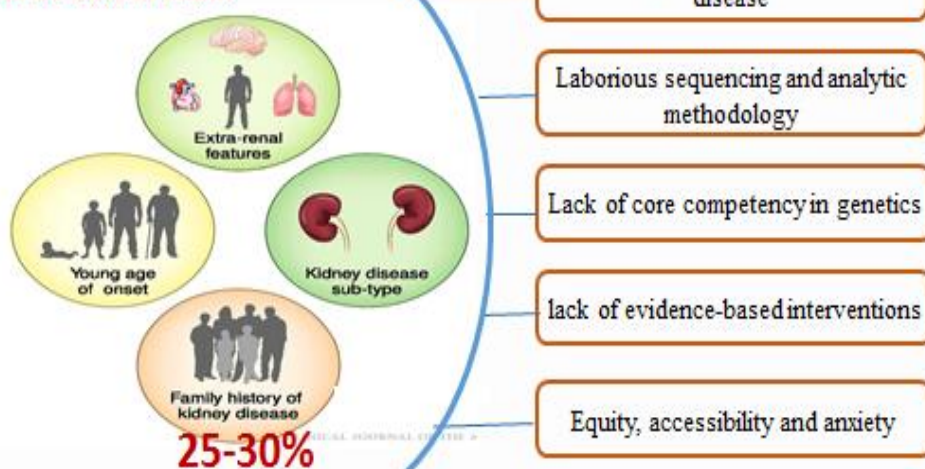
18 歲，血糖，腎臟功能正常

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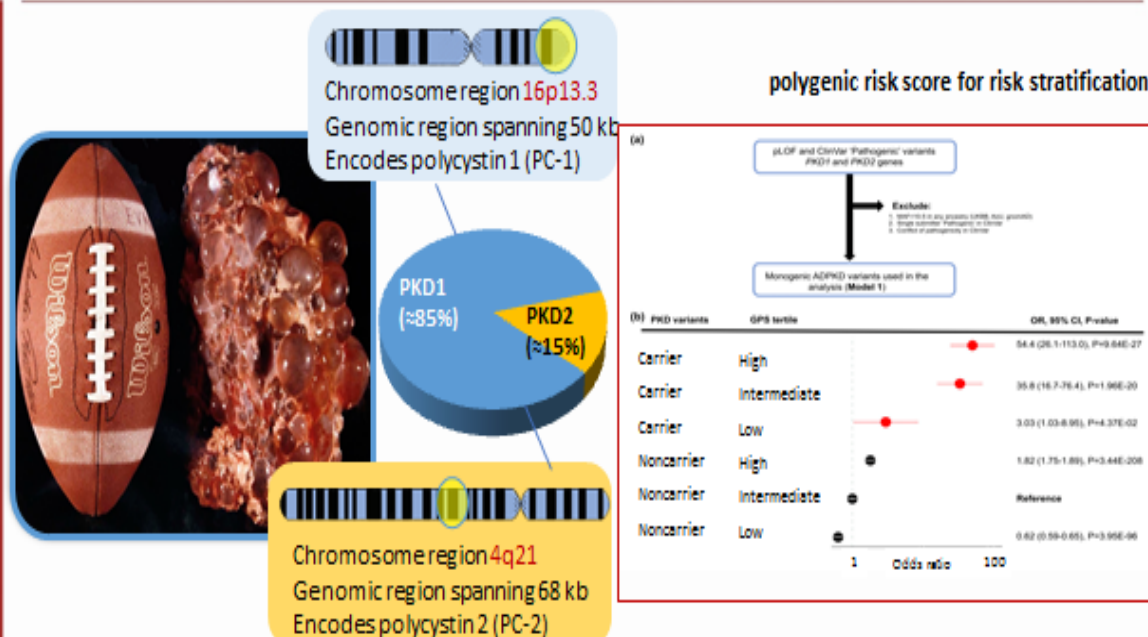
Unmet clinical needs: Genetic testing and actionable genes



- Prevalence of genetic kidney disease: 8.5-9.8%
- Monogenic kidney disease is present in 35-50% of them



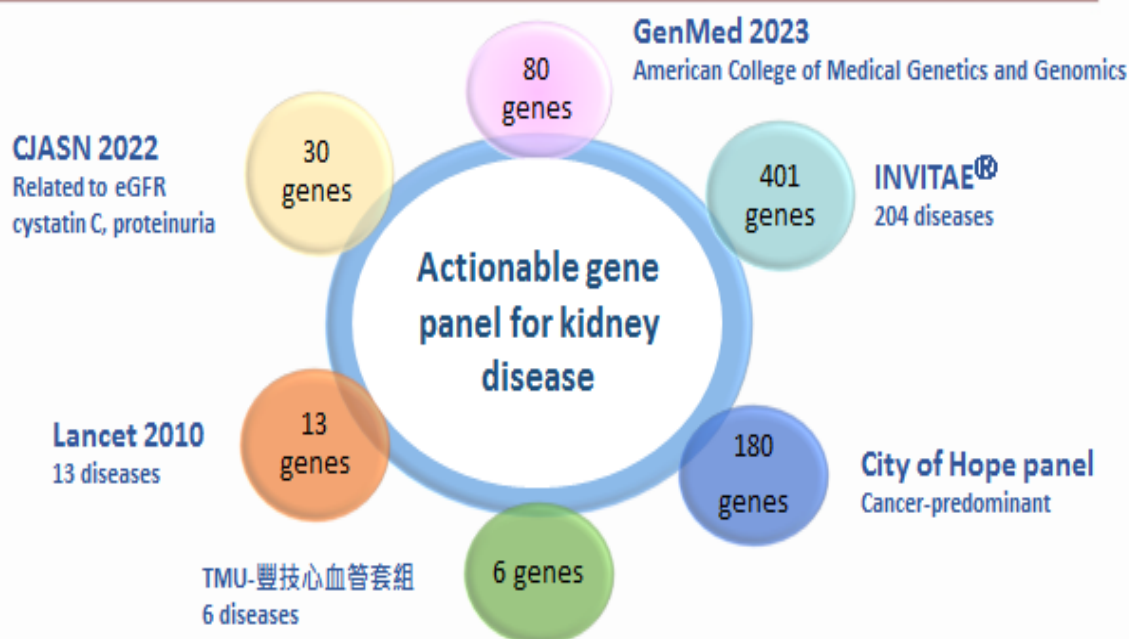
Autosomal dominant polycystic kidney disease: Monogenic kidney disease with genetic approach



Harris PC, Rossetti S. Nat Rev Nephrol. 2010; Khan, A. et al. Nat Commun. 2023

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目前無適合臨床應用的腎病相關可行動的基因套組

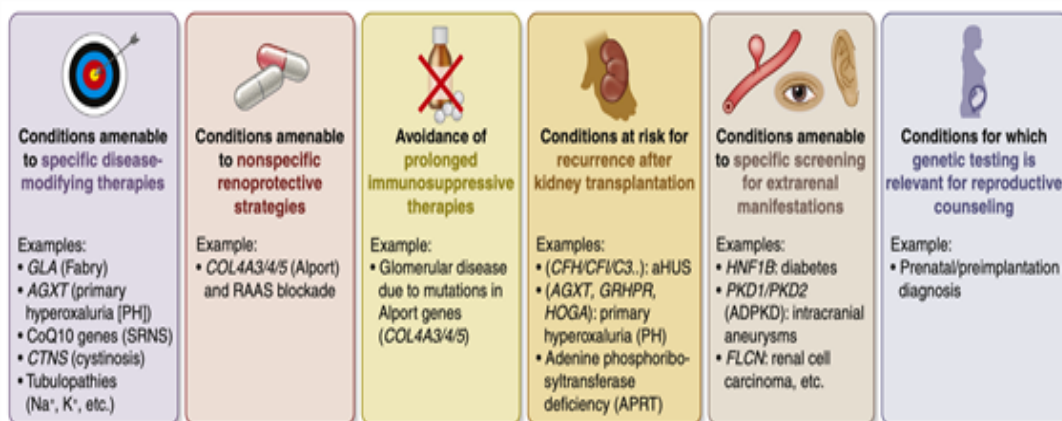


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可行動的基因檢測可增加診斷的精準性亦能提供疾病早期介入



- **Actionable genes:** genes significantly altered, confer a high risk of serious disease that could be prevented or mitigated if the risk were known



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腎病精準醫學計畫：改變疾病照護策略，實現數位精準管理



S1

建立精準照護流程

S2

培育基因專業人才

S3

驗證精準照護效益

【基因檢測】建立檢體及定序流程

【基因檢測】結果判讀及報告

【基因資料庫】建立世代研究族群

【公衛環境】建立公衛及環境測值

【基因體學】基因分析人員培育與訓練

【遺傳諮詢】建立諮詢內容及訓練

【精準治療】建立基因建議介入項目

【驗證療效】確認精準檢測與預後關係

【臨床應用】數位精準管理

2024
04

2024
06

2024
12

2025
03

2025
12

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One campus: 共同收案，共享資料，共同發表



• Genomic Cohort Establishment



高治圻

IgA nephropathy



廖家德/林冠宏

Polycystic kidney disease

Diabetic kidney disease



吳岳霖

Other kidney disease

- Prospective cohort with repeated measurement
- Outcome: rapid renal progression (eGFR decline > 50 % or progression to ESKD) or occurrence of cardiovascular disease
- Exposome, multi-omic biomarker and social determinant of health
- Next steps: kidney cancers

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Precision health care of Future Nephrology in TMU



RISK PREDICTION

TREATMENT GUIDANCE



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腎移植團隊

計畫主持人：吳美儀 副院長

報告人：羅偉成 老師

113.06.19

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【精準健康】

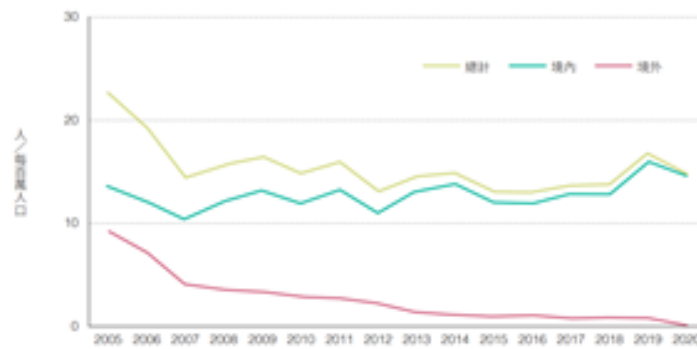
台灣器官移植受贈者的預期壽命和終身醫療支出
Life expectancy and lifetime healthcare expenditure of
adult solid organ recipients in Taiwan

Background



財團法人器官捐贈移植登錄中心

台灣腎臟移植率(2005-2020)



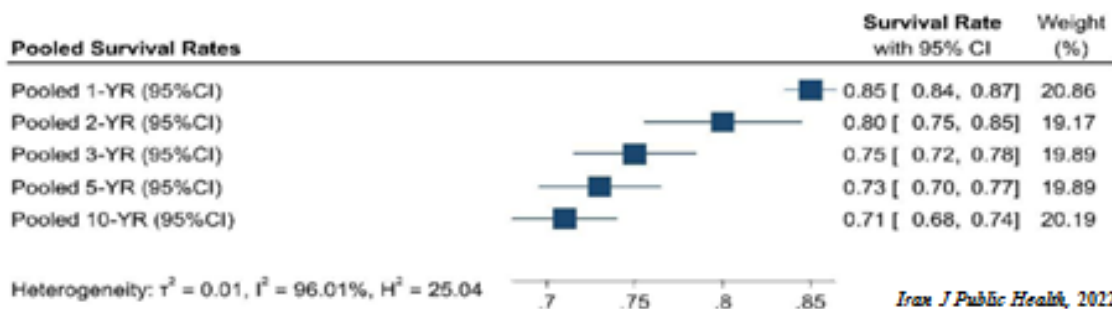
資料來源：台灣健保資料庫。

註：(整體/境內/境外)移植率 = (整體/境內/境外)當年移植數/當年人口數 $\times 10^5$ 。

2022醫療年報, 2023

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Background Survival & Mortality Risk of Liver Transplant



Iran J Public Health, 2022

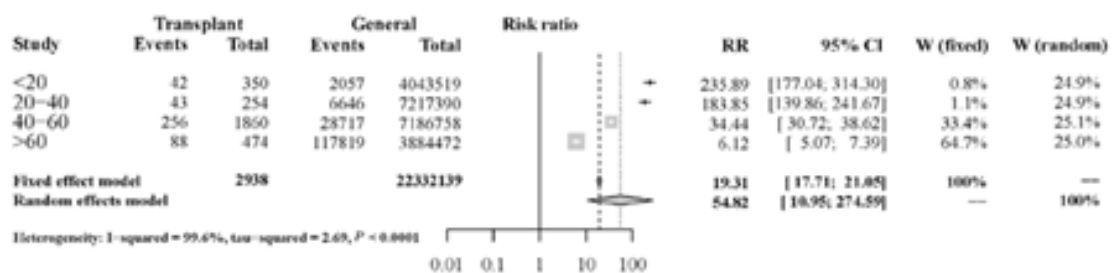


Fig 1. Mortality risk ratios of liver transplant recipients versus the general population.

Plos one, 2015

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Methods Study population & Data source

- 研究族群與資料來源
- 台灣全民健保資料庫(2000-2016)，年滿20歲的移植接受者，追蹤至2022年。

	Codes
ICD-9-CM	heart (V42.1), lung (V42.6), kidney (V42.0), and liver (V42.7)
ICD-10-CM	heart (Z94.1), lung (Z94.2), kidney (Z94.0), and liver (Z94.4)

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Summary



Contents lists available at ScienceDirect

Science of the Total Environment

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



Lifetime exposure to PM_{2.5} air pollution and disability-adjusted life years due to cardiopulmonary disease: A modeling study based on nationwide longitudinal data

Wei-Cheng Lo^a, Tsuey-Hwa Hu^b, Jing-Shiang Hwang^{b,*}

JMIR PUBLIC HEALTH AND SURVEILLANCE

Original Paper

Impact of Healthy Lifestyle Factors on Life Expectancy and Lifetime Health Care Expenditure: Nationwide Cohort Study

Wei-Cheng Lo^{1,2}, PhD; Tsuey-Hwa Hu³, MSc; Cheng-Yu Shih⁴, MSc; Hsien-Ho Lin⁴, MD, SCD; Jing-Shiang Hwang¹, PhD

¹Master Program in Applied Epidemiology, College of Public Health, Taipei Medical University, New Taipei, Taiwan

²School of Public Health, College of Public Health, Taipei Medical University, Taipei, Taiwan

³Institute of Statistical Science, Academia Sinica, Taipei, Taiwan

⁴Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University, Taipei, Taiwan

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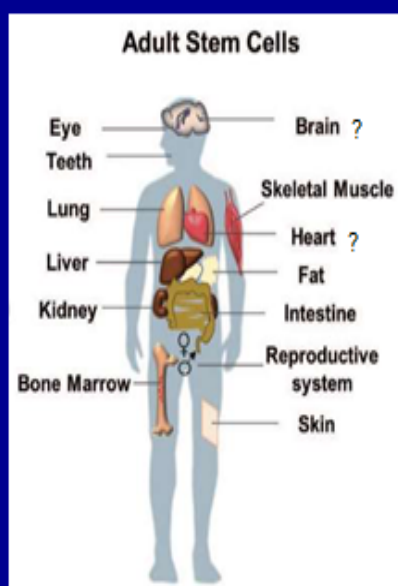


功能性泌尿團隊

蕭志豪醫師

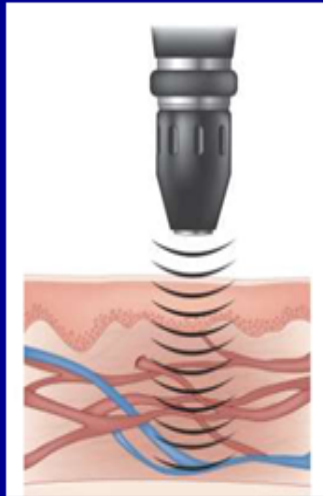
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What are the Tissue-Resident Stem Cells (TRSCs)?



Most adult organs contain stem and progenitor cells. They are referred to as **tissue-resident stem cells (TRSCs)**.

A Non-invasive Stem Cell Therapy



Activation of
Tissue Resident Stem Cells
(TRSCs)

- Low intensity pulsed ultrasound (LIPUS)
- Unfocused low intensity shock wave (MAP)

Microenergy Acoustic
Pulse (MAP) therapy

FDA Approved Treatments for SUI

Pelvic Floor
Conditioning
30% - 50% Effective—Low Risk

Electrical stimulation



Magnetic stimulation



Biofeedback



Urethral
Injection

- 50% Effective
- Moderate Risk



Sling Surgery

- 80% Effective
- High Risk



Clinical Trial Results

	PWT Success %	PST Success %
Control Group at 10 treatments (n=74)	39.2%	10.8%
Active Group at 10 treatments (n=112)	51.8%	21.2%
Active Group at 16 treatments (n=97)	79.4%	39.2%
Active Group after 3 maintenance treatments (n=65)	73.8%	49.2%

AWCT (Acoustic Wave Cell Therapy) SUI-100™ for Stress Urinary Incontinence

- Study Title: Pivotal Study of the SUI-100™ for the Treatment of Stress Urinary Incontinence (SUI):
A Nonsignificant Risk (NSR) Device Study



- 國際學者：呂福泰醫師/教授江慈臨「台北醫學會」解說初期試驗結果
- 本試驗的特點與競爭性：
 - 低風險：本醫療器材(SUI-100)已取得FDA Nonsignificant Risk (NSR)認同，屬非侵入式低風險之器材
 - 副作用低：過去試驗無顯著AE發生
 - 治療效果顯著：Phase 2 試驗已證實，治療16次後病人的有效反應率可達79.4%
(目前SUI非侵入治療方法最有效者為雷射，有效率約58%)
 - 操作簡便：護理師即可執行治療
 - 國際性：多國多中心三期臨床試驗，完成後可申請FDA & TFDA NDA，與美國保險給付
 - 連結國際KOL：本技術的開發者為國際泌尿科權威 UCSF 呂福泰醫師/教授
 - 產品穩定性：本醫療器材由台灣具多年震波醫療器材製造經驗之廠商生產

