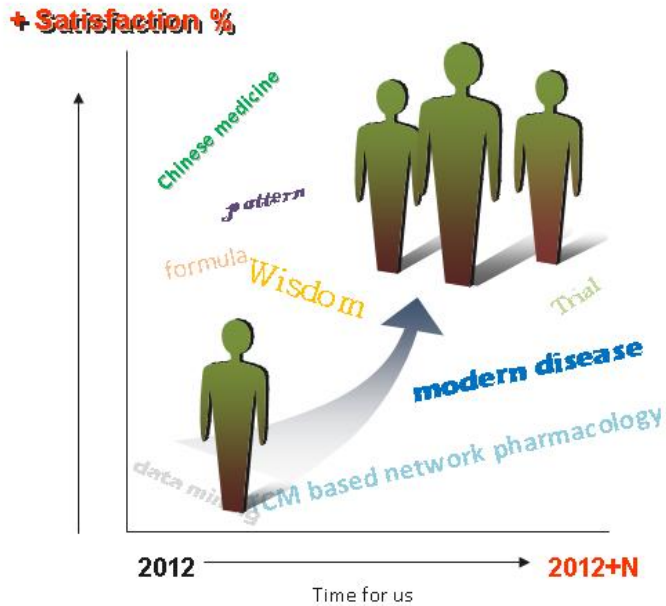


Wisdom of Chinese medicine and complexity of modern disease

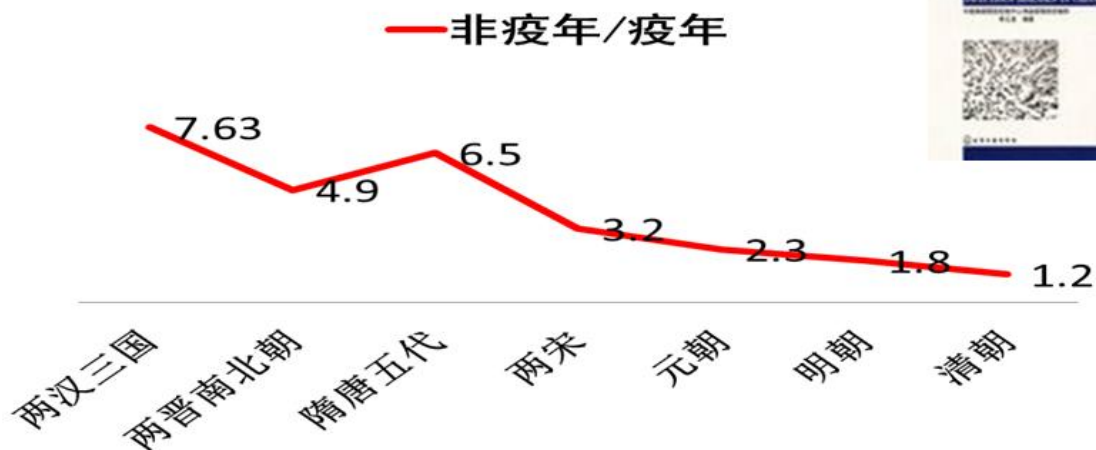


Rheumatoid arthritis as an example

Aiping Lu, MD, PhD

Hong Kong Baptist University

中国古代传染病对民众生活的影响



- 1910年10月至1911年3月抬埋队在傅家甸收集尸体，6万条生命被鼠疫吞噬。

现代慢性病 对民众生活的影响

城市居民前十位死因为：

恶性肿瘤
脑血管病
心脏病
呼吸系统病
损伤及中毒
内分泌营养和代谢疾病
消化系病
泌尿生殖系病
神经系病
精神障碍
死因合计占死亡总数的90.4%。

公共卫生重点

从传染病爆发转移到了慢性病防治领域。

健康中国 中国药品品牌榜上榜品牌



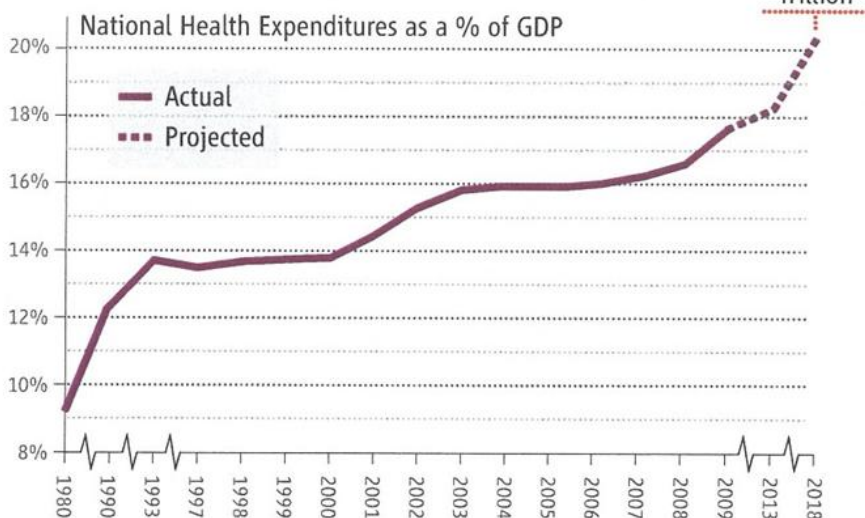
- 数据来源于“2011全国药品零售业态信息发布会暨中国医药企业合作与发展论坛”
- 上榜的58家制药企业的69个药品品牌中，慢性病用药品种占据了23个名额，中药类(含饮片)品牌以53%的占比超过了化学药类品牌。

慢性疾病：复杂性疾病
中药治疗比例超过化学药

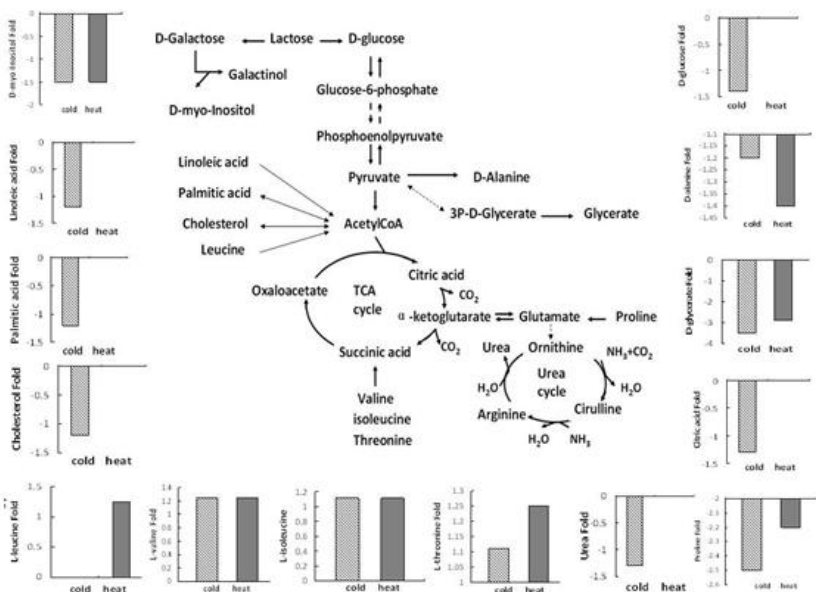
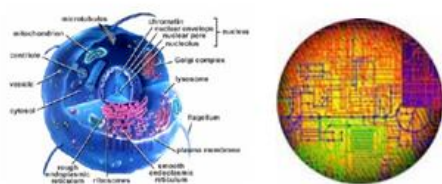
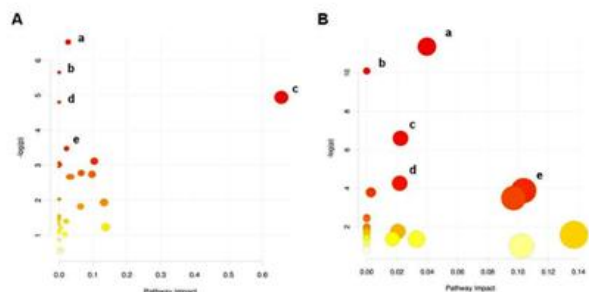
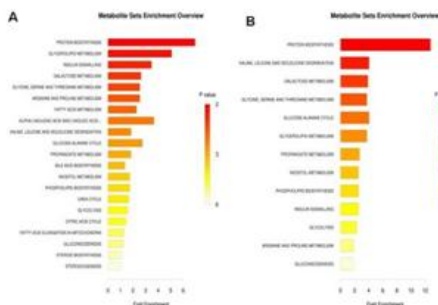
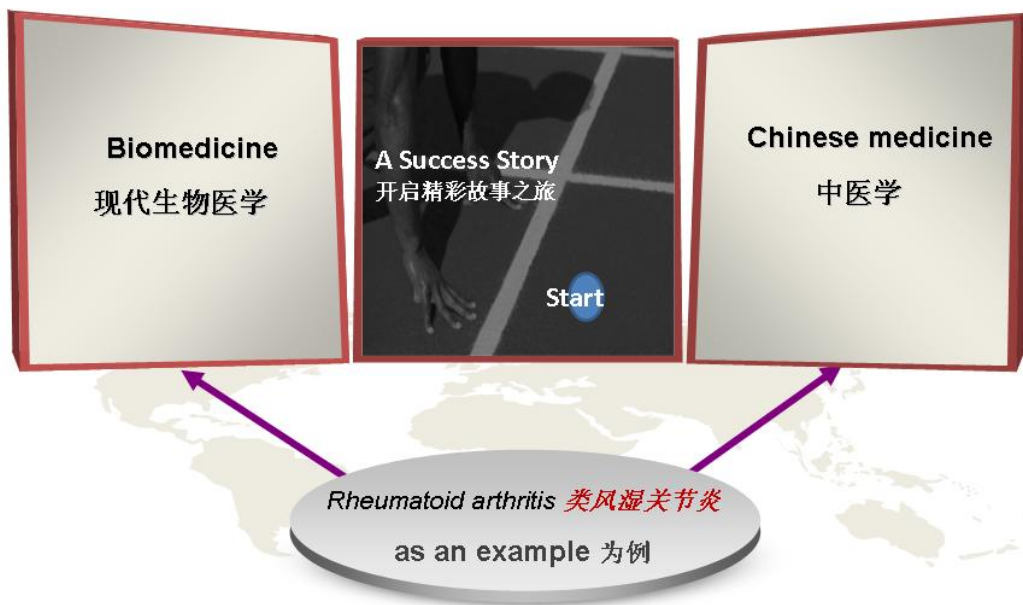
中医的智慧——疾病的复杂性

THE PROBLEM

Rising U.S. Health Expenditures



From 1 size fits all >> Personalized Medicine
Incorporation of CM into conventional medicine is key



Rheumatoid arthritis
Complicated
Connected network



A Rheumatic clinic

Doctor: I have no other drugs, and I only can give you more MTX and SSZ

RA patients: I got no good effect, and this is my 100 times to have these two drugs

A diary from patient》

"I will put you on MTX and SSZ."
"It'll make you feel better, 101 times."

A recommended therapy would be used once the diagnosis is finalized basing on biomedicine.

Wisdom 1: Towards to personalized therapy with CM pattern

地点：某中医风湿科门诊

患者：我总感到手脚冷，只能喝热水，天气变冷就觉得关节僵硬更严重了.....

医生：根据您的症状，属于偏于寒性的证型，总体来说，中医中将类风湿关节炎大致分为寒热两种证型，将根据您的症状给您开方。

标签：
证候分类；个体化医学；天然复方

摘自《就诊日记》

宣传板

类风湿关节炎中医主要证型

类风湿关节炎患者起居注意事项

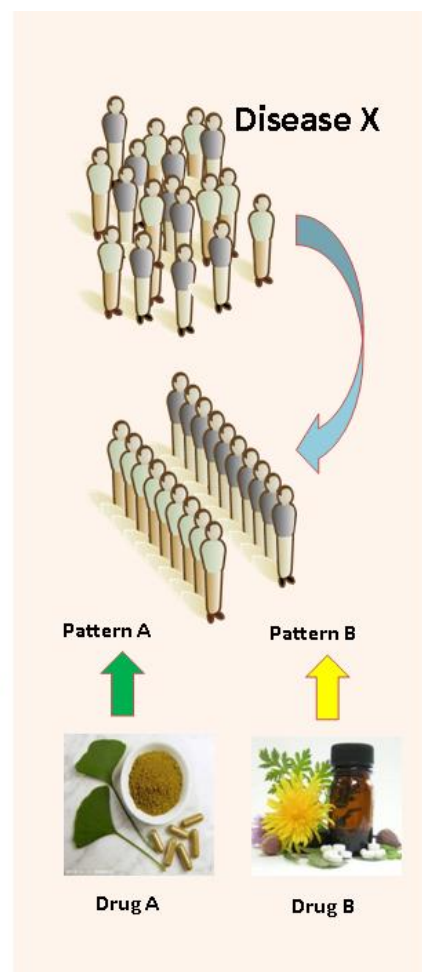
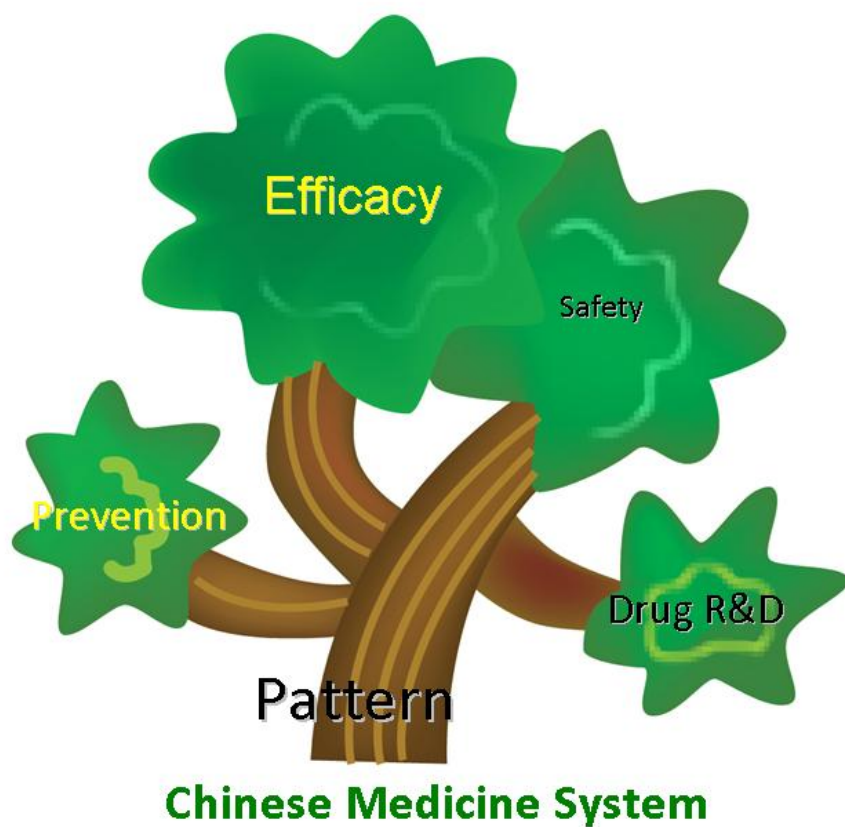
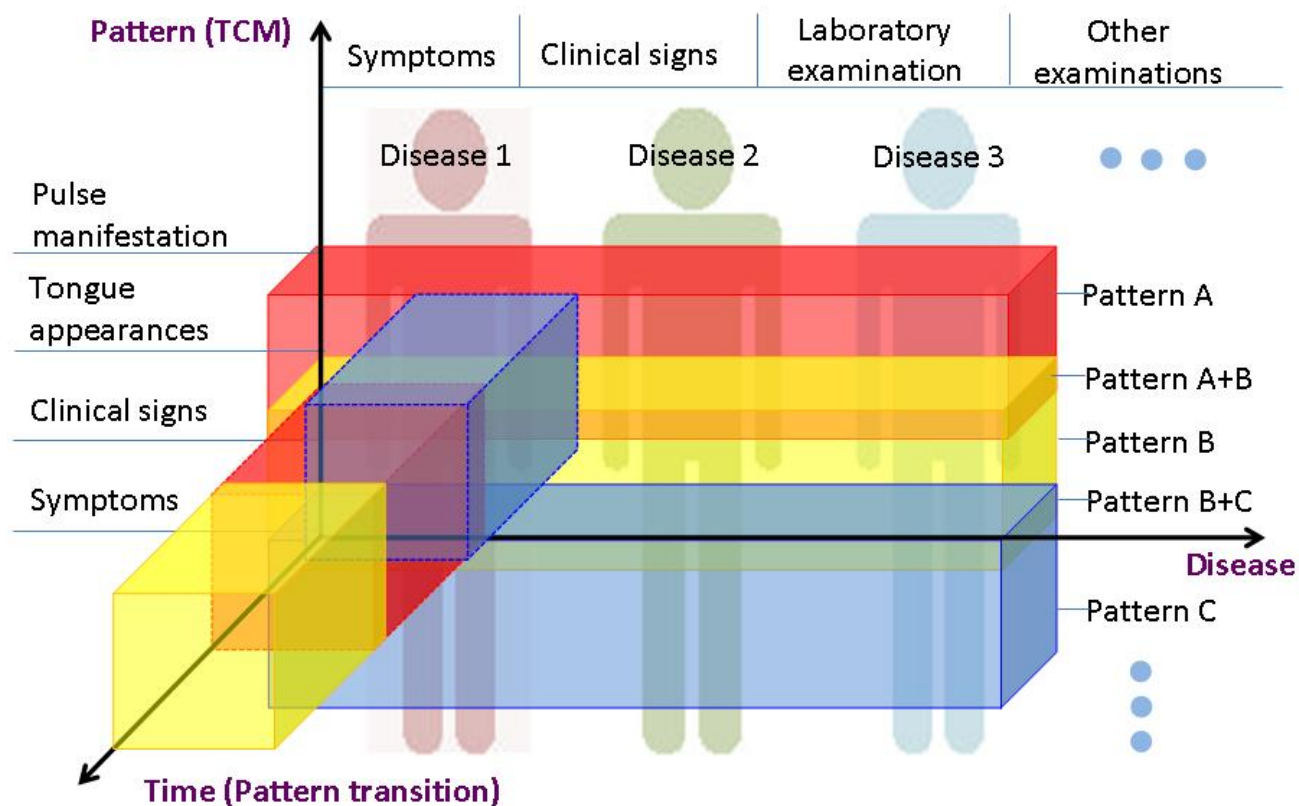


中医可根据您的症状将类风湿关节炎分为不同证型的。

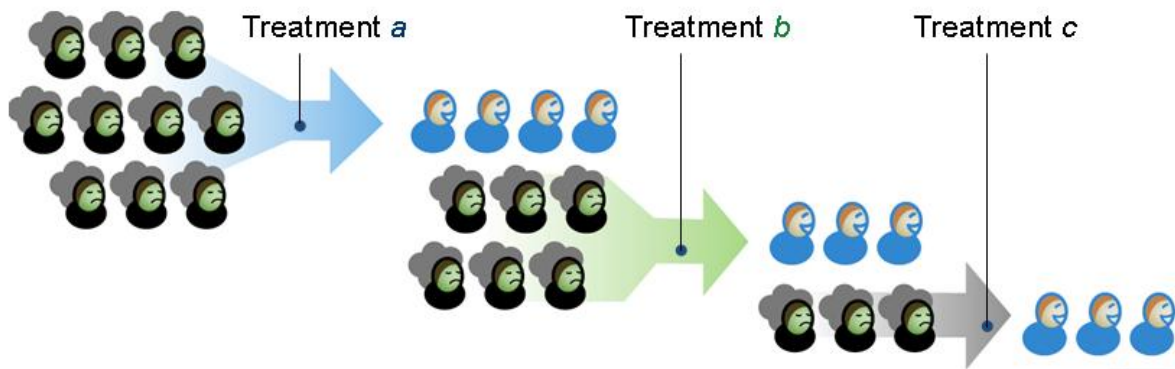
手脚冷，只能喝热水，天气变冷就觉得关节僵硬更严重了。



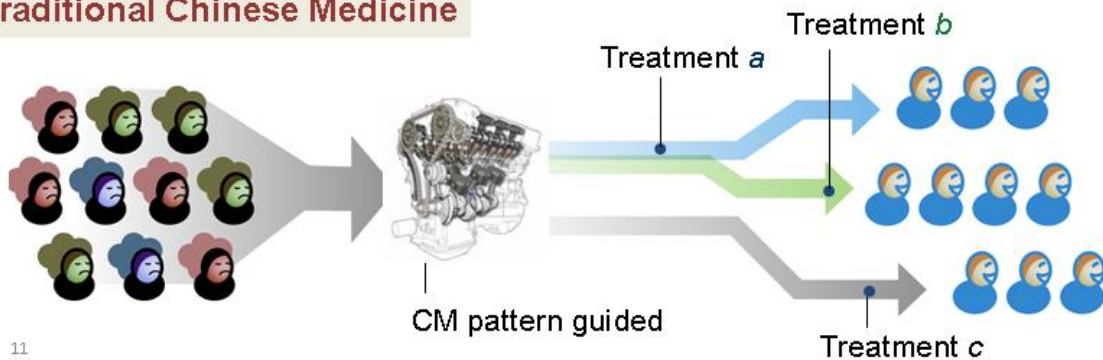
Connections
Multiple herb formula
Life style consultation



Empirical Medicine



Traditional Chinese Medicine



11



《灵枢·外揣》曰：

“合而察之，切而验之，见而得之，若清水明镜之不失其形也。”

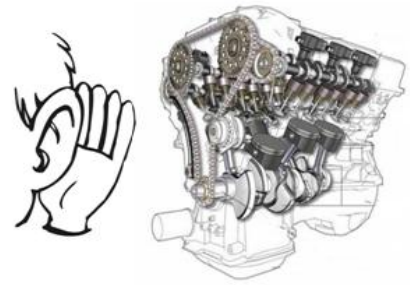
Wisdom of Chinese medicine

证候分类

Pattern Classification



观察or拆分

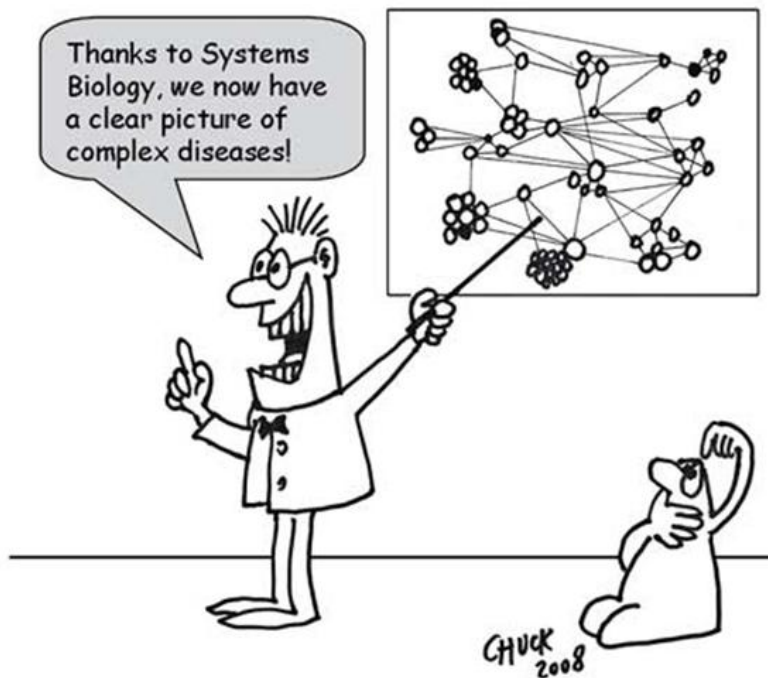


Problems:

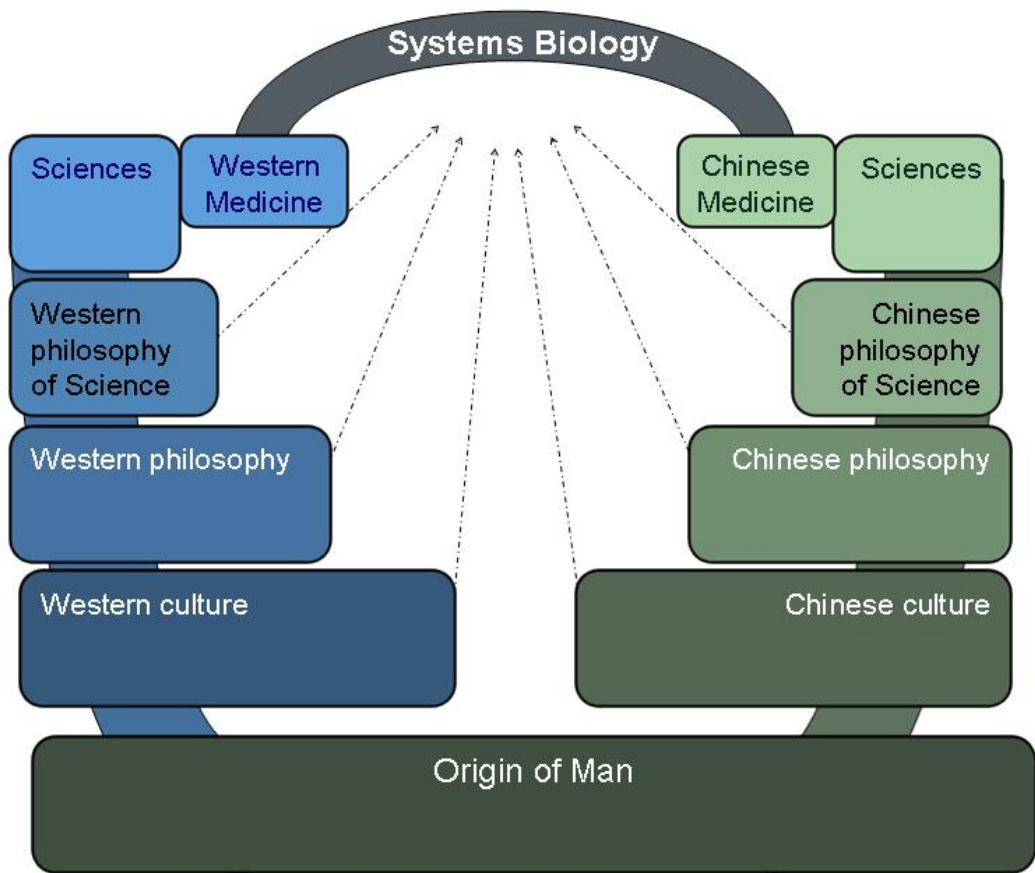
Connections

Components leading connections

Components + connections



Data ↔ Information ↔ Knowledge ↔ Wisdom

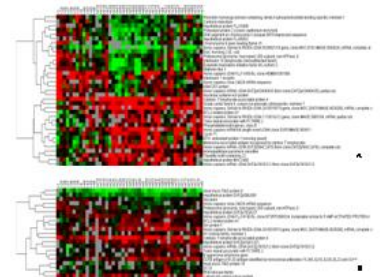
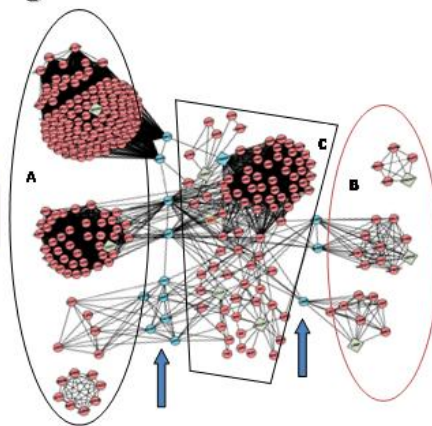


From Van der Greef

Wisdom of integrated Chinese medicine and biomedicine

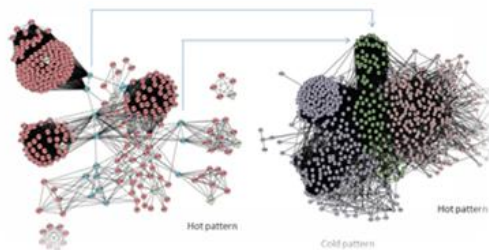
RA 寒热证候的网络

Cold Pattern & Hot Pattern



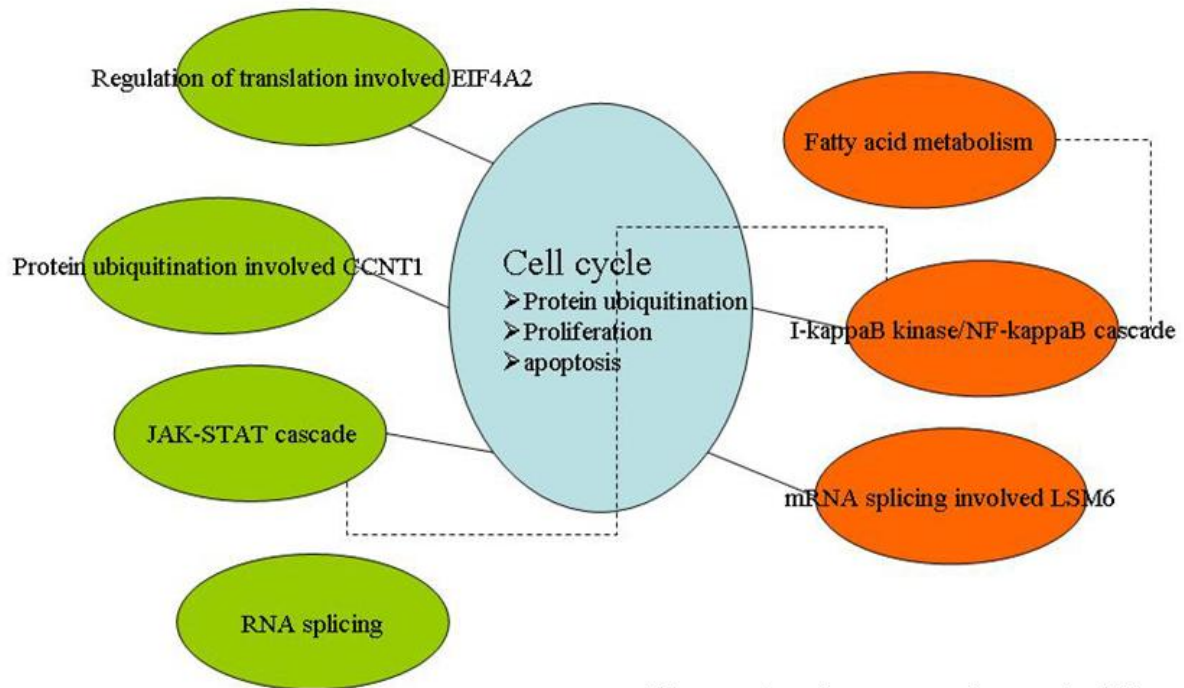
Biological characters:
Cold and hot pattern
in RA

Pattern change:
Cold to hot
Hot to cold



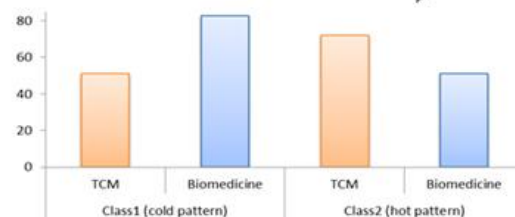
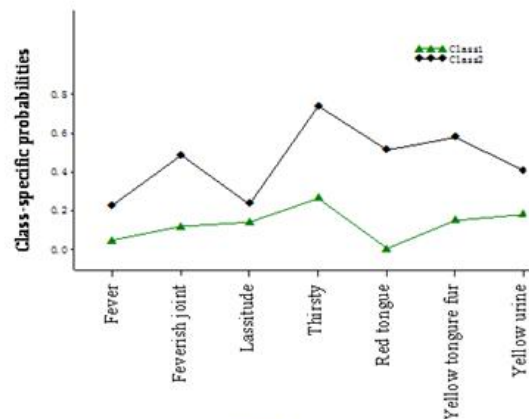
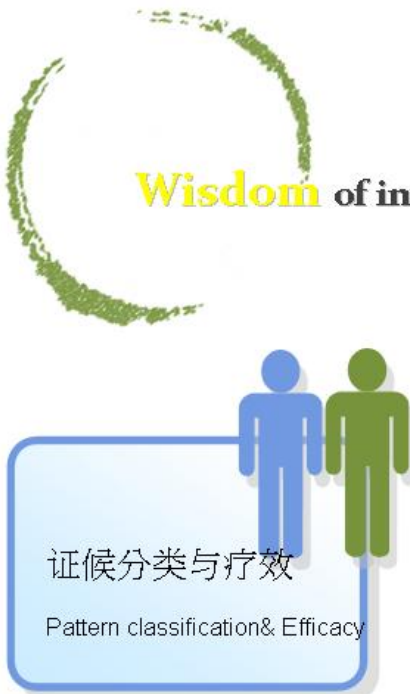
Cold pattern

Heat pattern



First molecular network map in CM pattern of

Wisdom of integrated Chinese medicine and biomedicine

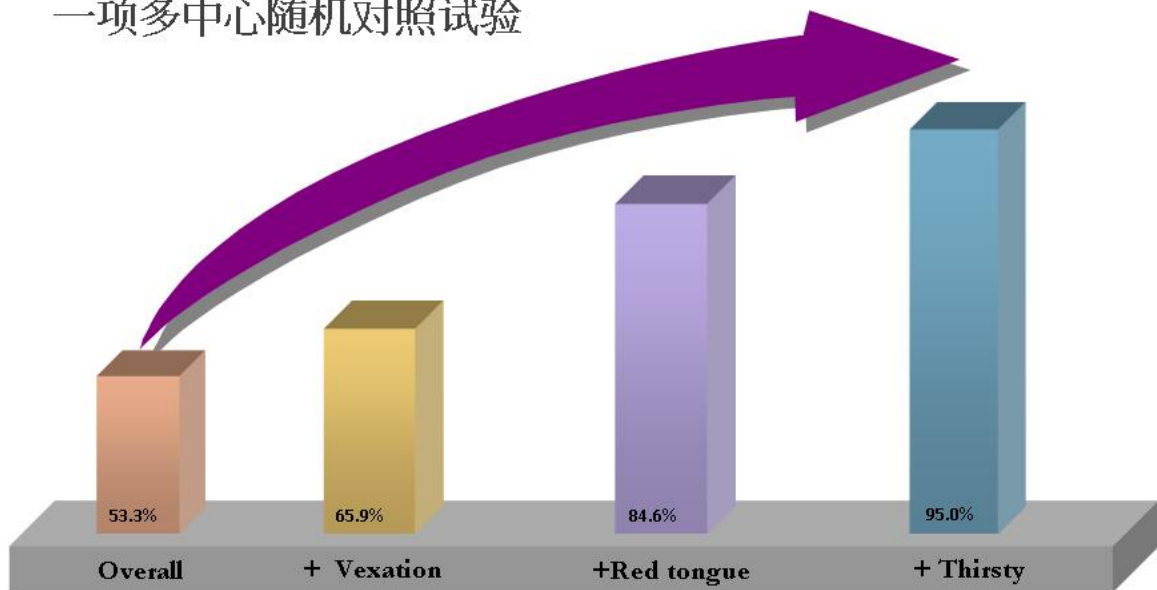


So called nothing important symptoms or Pattern does important in outcome of interventions

Patients classification	Intervention	n	Effective no. (%)	X ²	P-value
Class1 (cold pattern)	TCM	47	24 (51.06)	15.41	<0.0001
	Biomedicine	58	50 (82.61)		
Class2 (hot pattern)	TCM	43	31 (72.09)	4.08	0.043
	Biomedicine	45	23 (51.11)		

A Multi-center randomized controlled trial

一项多中心随机对照试验



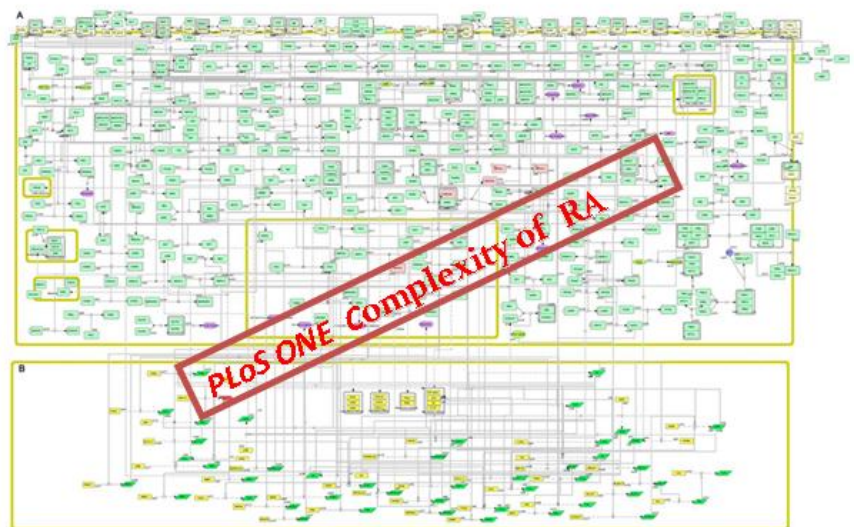
ACR responses

ACR20 & TCM intervention

Symptoms and the characters of RA patients

Wisdom of integrated Chinese medicine and biomedicine

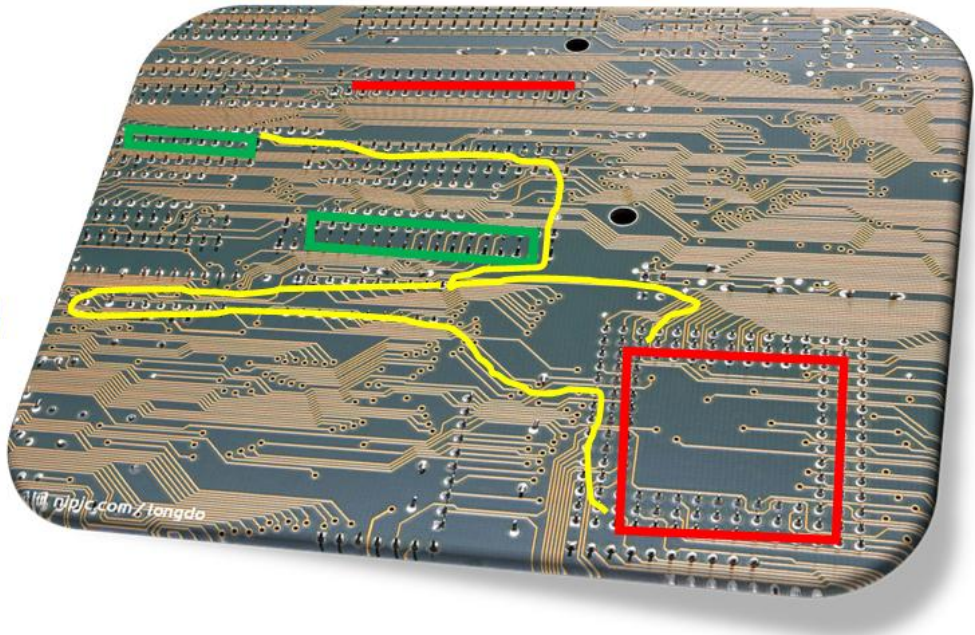
中药复方干预
Chinese herbal formula



Chronic diseases, such as RA, DM, CHD, are complicated and can be illustrated with networks

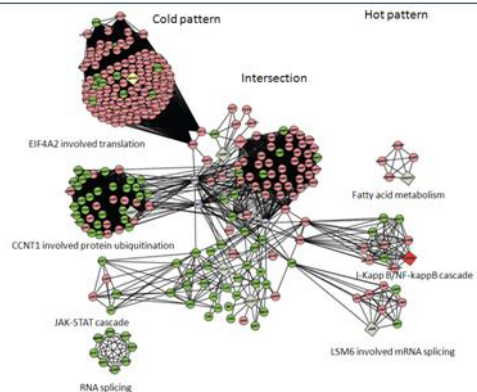
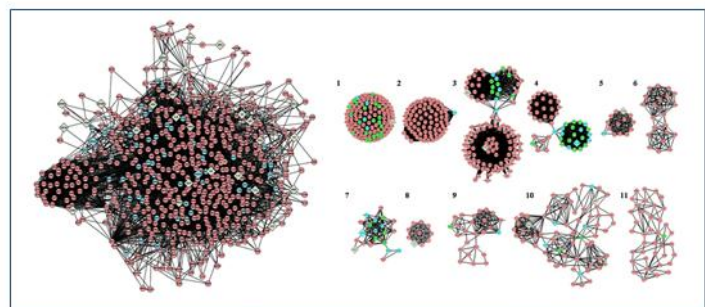
Wisdom of Chinese herbal formula

Wisdom 2:
Herbal formula
intervention

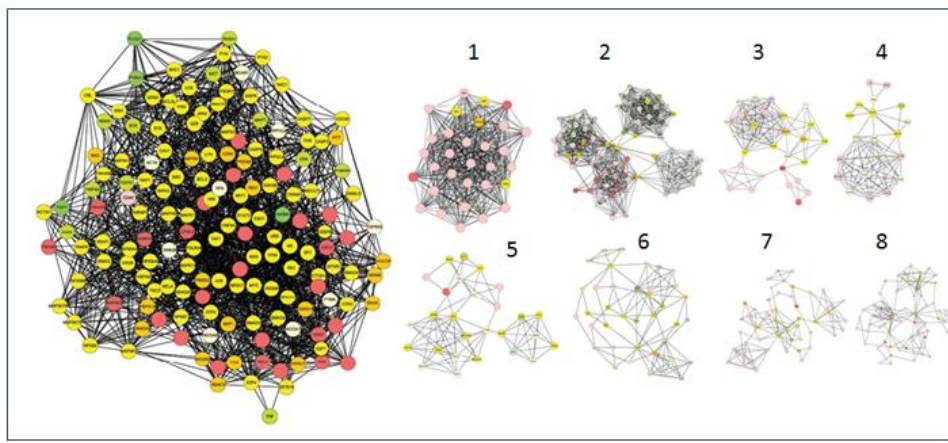


Wisdom of integrated Chinese medicine and biomedicine

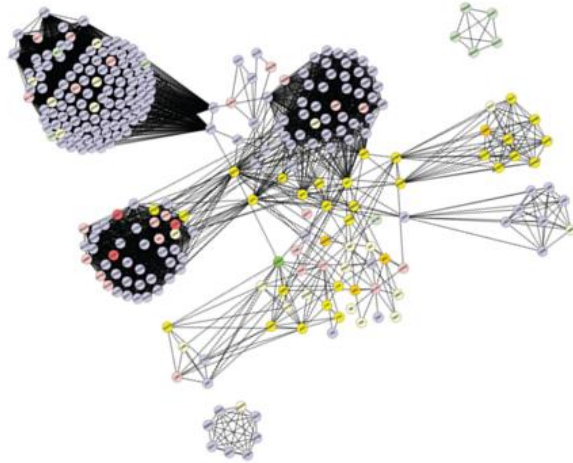
寒热证候
↓
复杂干预
↓
组合治疗



Biomedicine combination therapy



TCM herbal formula therapy



23

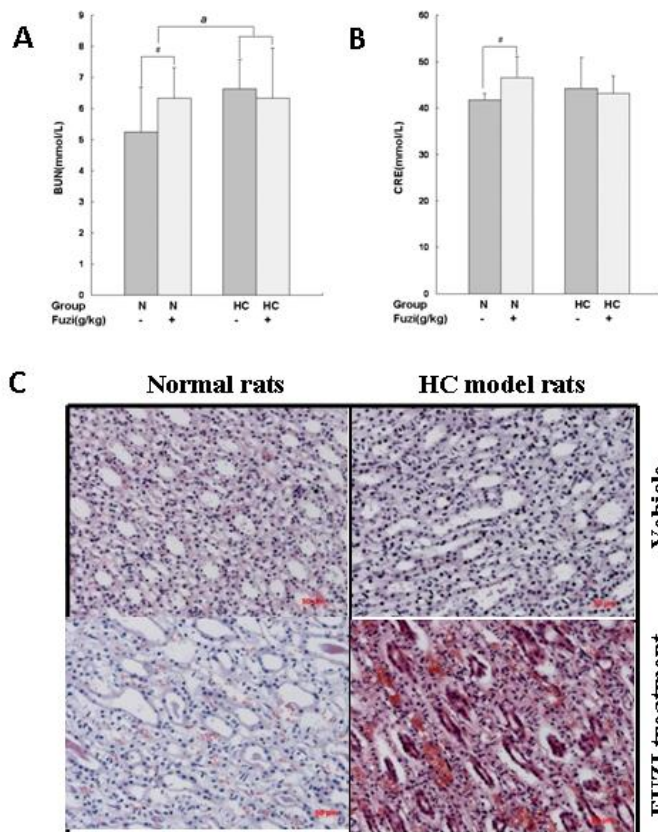


Fig.1.

(A) serum urea nitrogen (BUN) level in different groups.

(B) serum urine creatinine (CRE) level in different groups. All of the samples were collected from the rats at the end of the study. # $p < 0.05$, ## $p < 0.01$ vs. the health control rats, * $p < 0.05$, ** $p < 0.01$ vs. the HC model rats (one-way ANOVA, followed by Student's t-test). a $p < 0.05$, b $p < 0.01$ vs. health rats treated by Fuzi (two-way ANOVA, followed by Student's t-test).

(C) Paraffin section and H & E staining of renal tissue at the end of the study (200 \times).

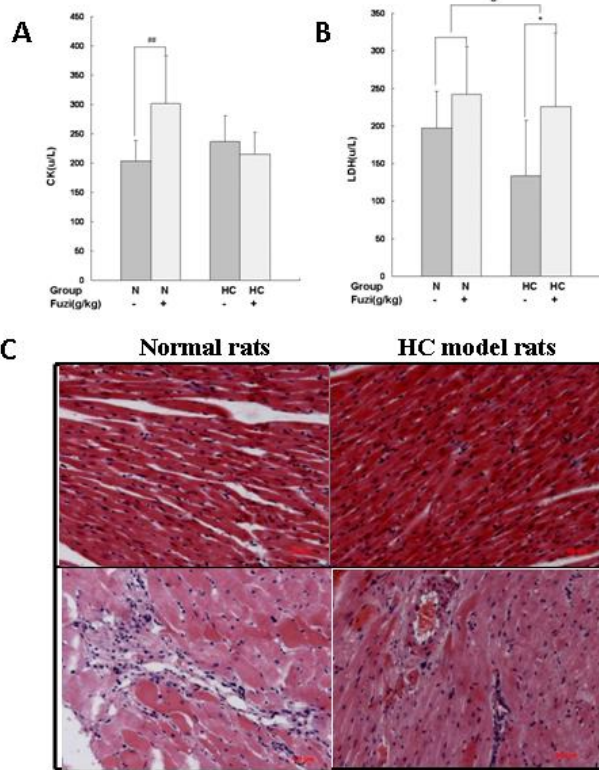


Fig.2.

(A) serum creatine Kinase(CK) level in different groups.

(B) serum lactate dehydrogenase(LDH) level in different groups. All of the samples were collected from the rats at the end of the study. ^{##} $p < 0.05$, ^{###} $p < 0.01$ vs. the health control rats, ^{*} $p < 0.05$, ^{**} $p < 0.01$ vs. the HC model rats (one-way ANOVA, followed by Student's t-test). ^a $p < 0.05$, ^b $p < 0.01$ vs. health rats treated by Fuzi (two-way ANOVA, followed by Student's t-test).

(C) Paraffin section and H & E staining of heart tissue at the end of the study (200 \times).

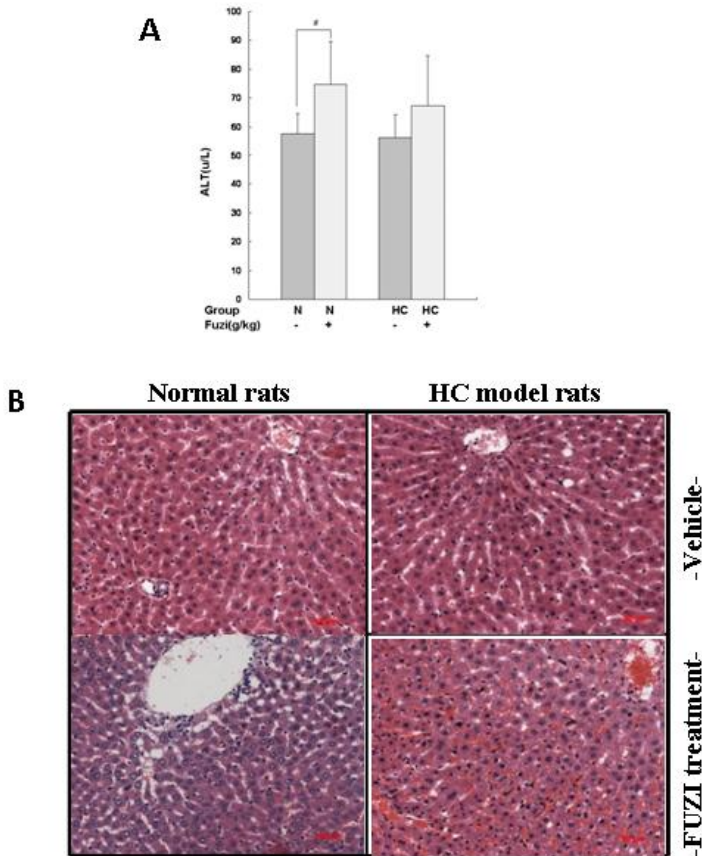
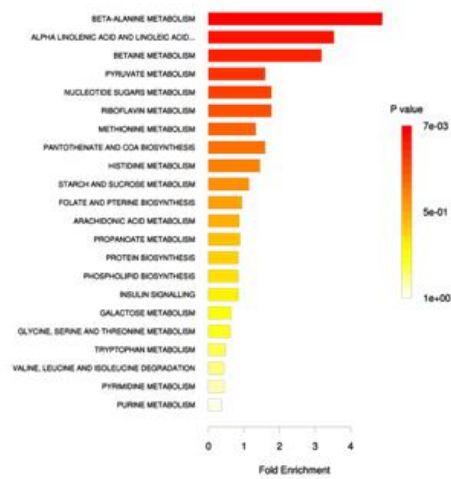


Fig.3.

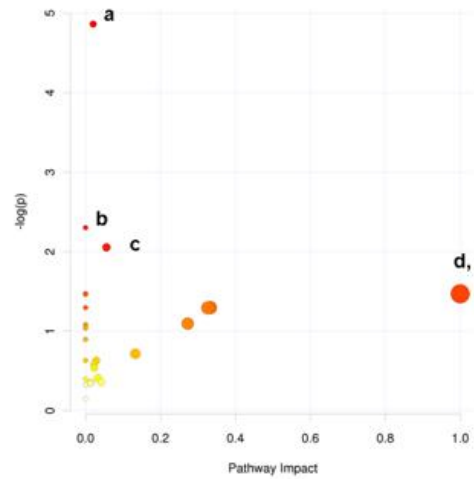
(A) serum creatine Kinase (ALT) level in different groups. All of the samples were collected from the rats at the end of the study. ^{##} $p < 0.05$, ^{###} $p < 0.01$ vs. the health control rats, ^{*} $p < 0.05$, ^{**} $p < 0.01$ vs. the HC model rats (one-way ANOVA, followed by Student's t-test). ^a $p < 0.05$, ^b $p < 0.01$ vs. health rats treated by Fuzi (two-way ANOVA, followed by Student's t-test).

(B) Paraffin section and H & E staining of liver tissue at the end of the study (200 \times).

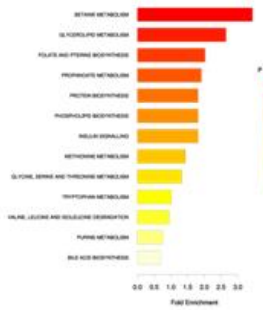
A Metabolite Sets Enrichment Overview



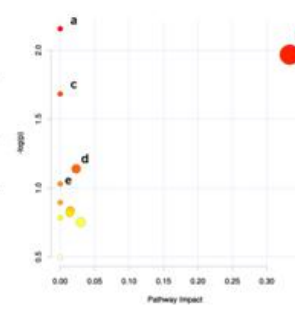
B



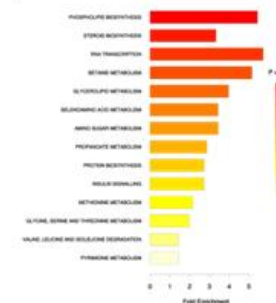
A Metabolite Sets Enrichment Overview



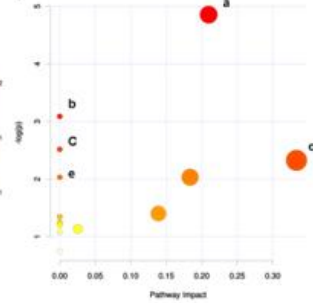
B



A Metabolite Sets Enrichment Overview



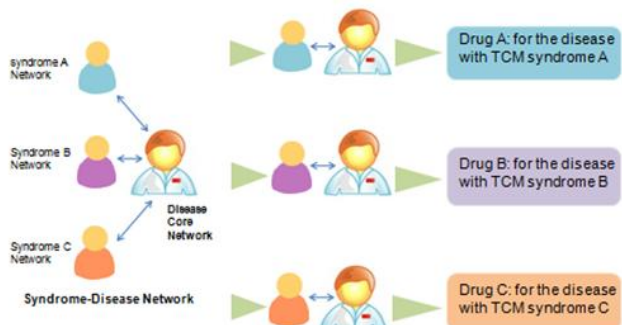
B



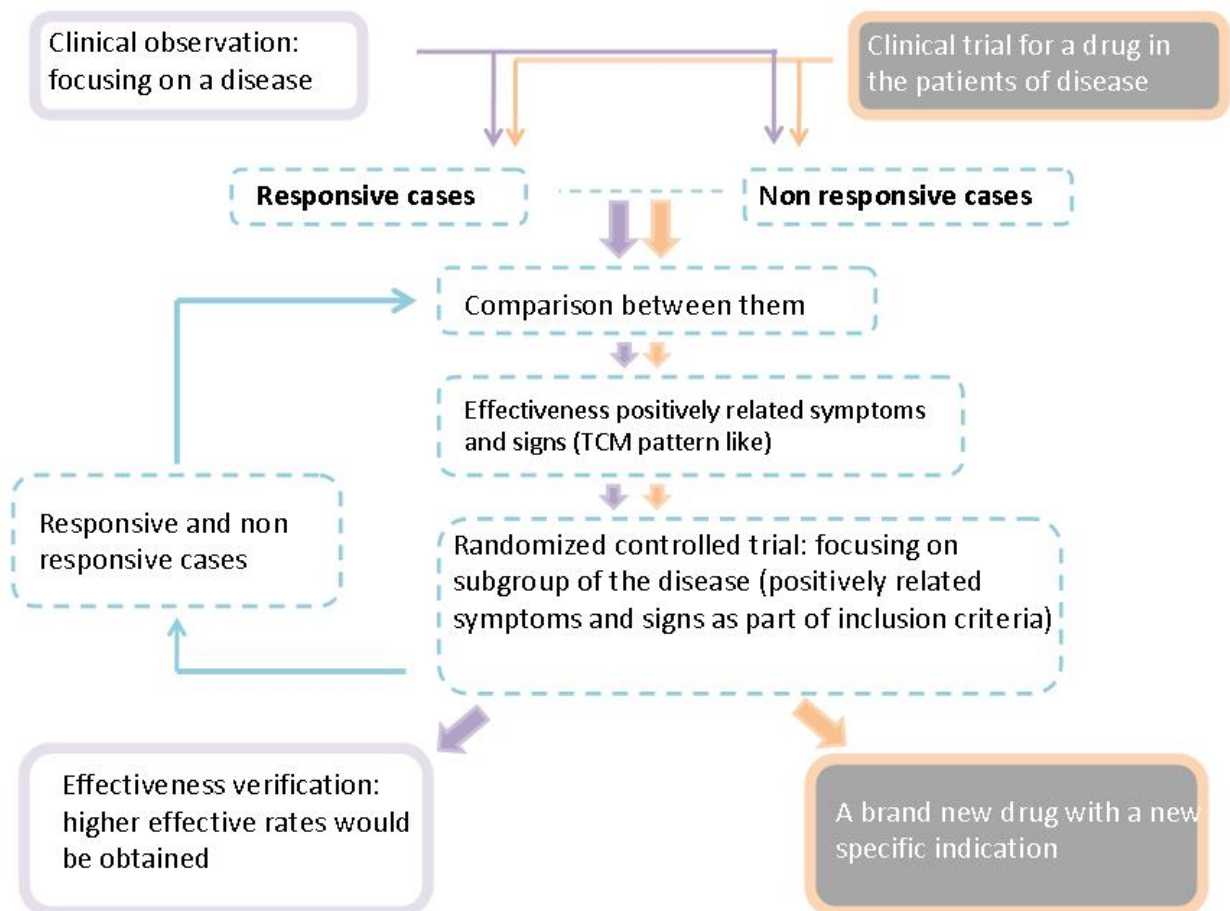
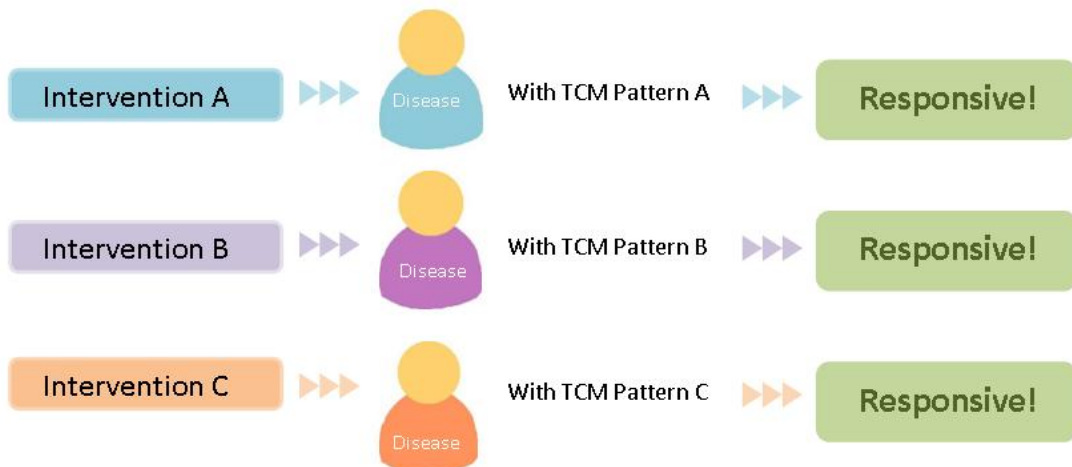
Wisdom of integrated Chinese medicine and biomedicine

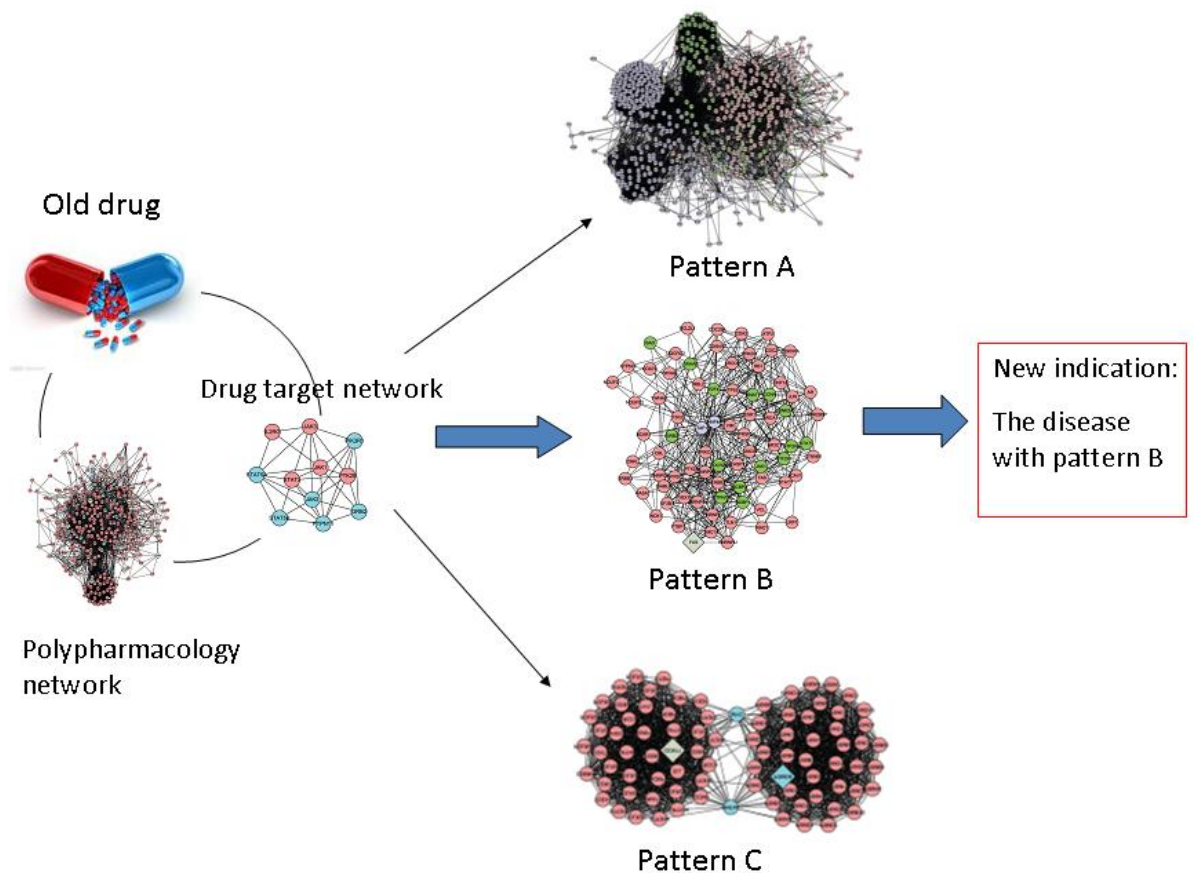
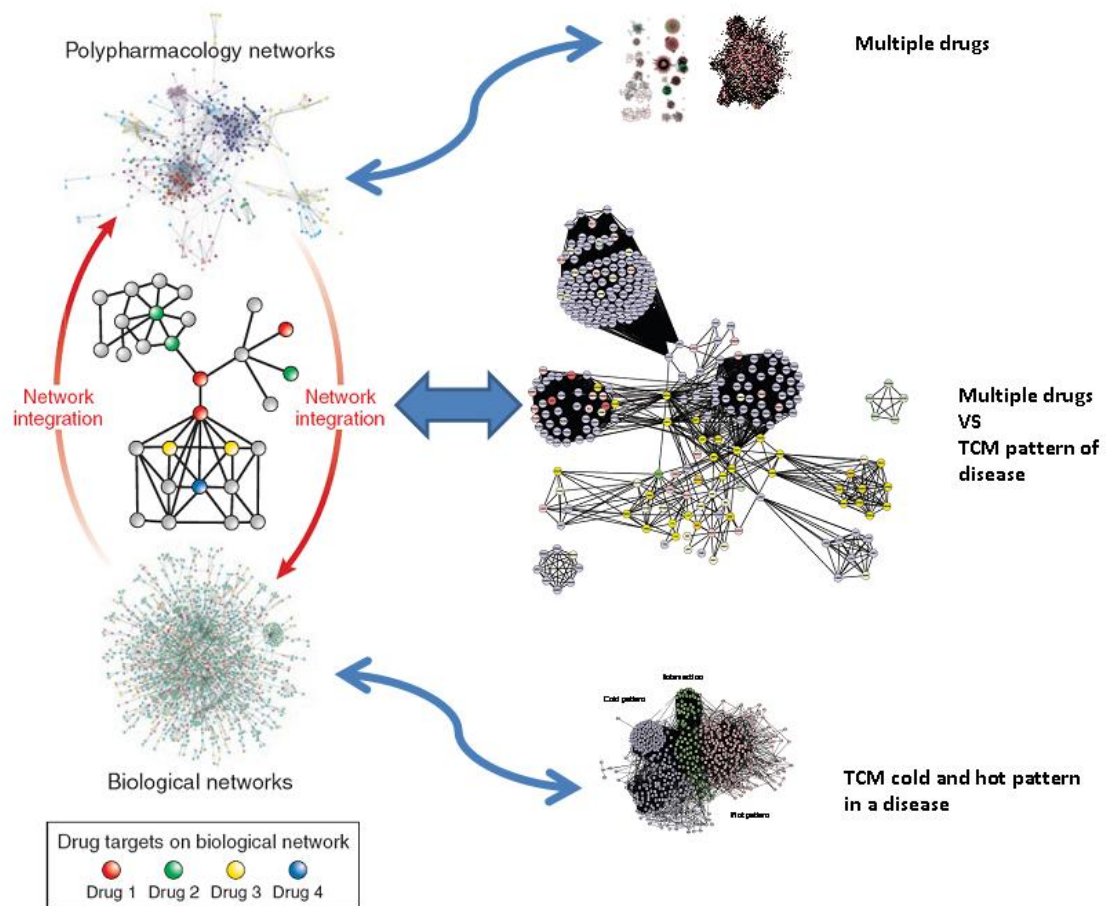
组合治疗

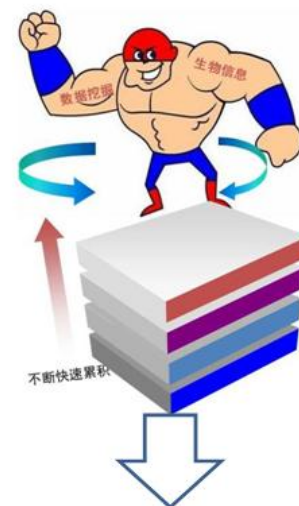
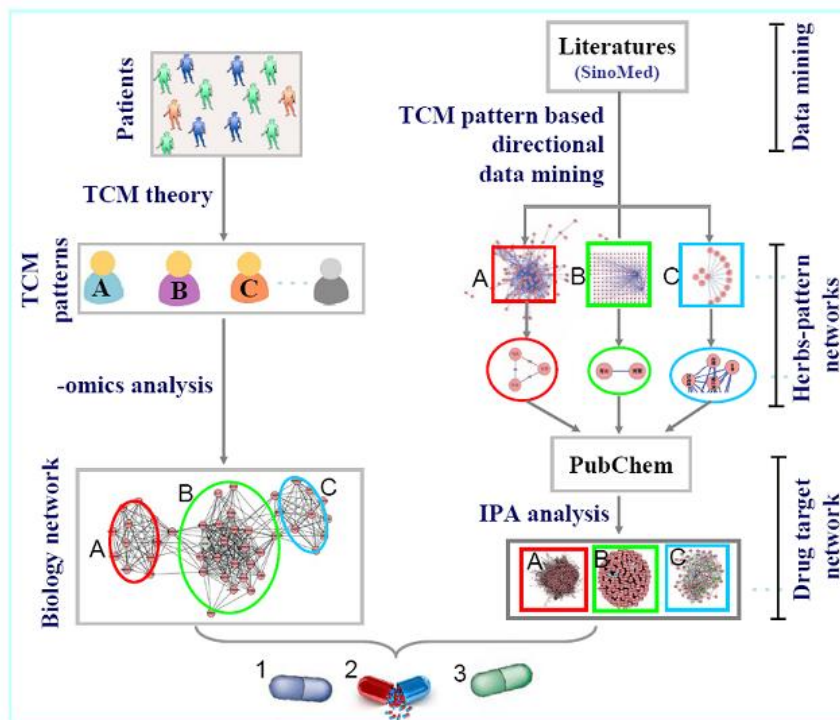
组合中药 研发



CM diagnosis + herbal formula lead to new strategy for drug discovery



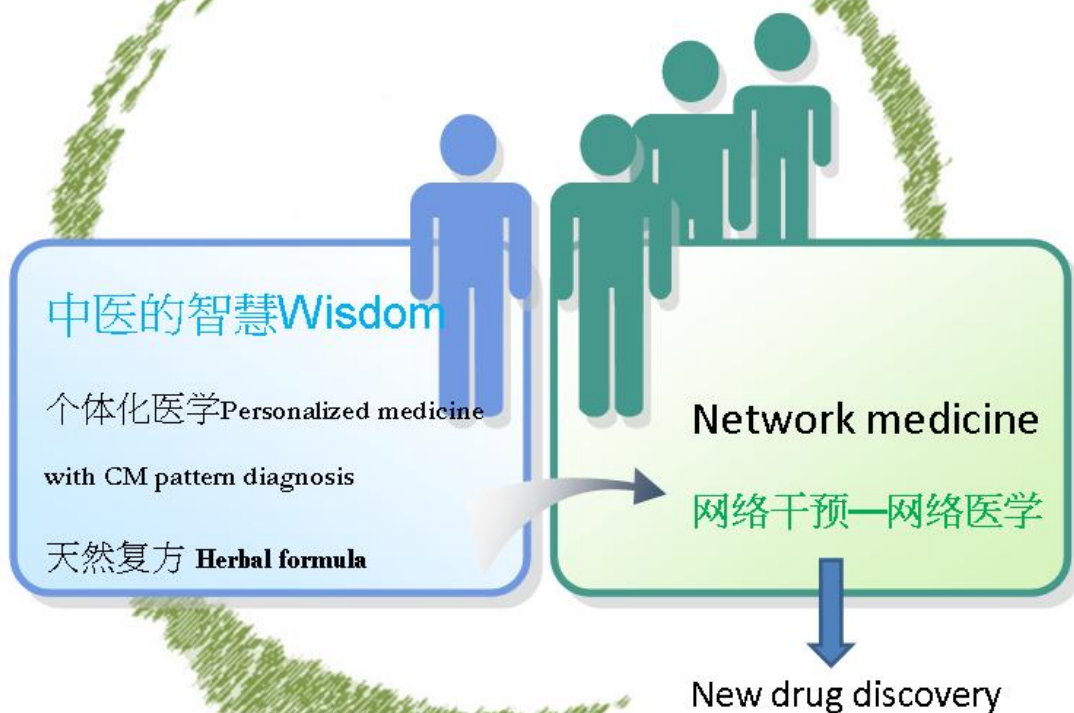




Experience based
Data based
Case collection based

Data mining and bioinformatics can help

Wisdom of Chinese medicine and Future medicine



Wisdom of Chinese medicine and Future medicine



人格的阴阳类型模式

人格类型	生理特点	心理特点
太阴	多阴无阳	胆小、孤僻、多疑
少阴	多阴少阳	沉静、节制、稳健、嫉妒心强
阴阳平和	阴阳气和	平静、适应性强
少阳	多阳少阴	外露、乐观、机制、随和
太阳	多阳无阴	大胆、进攻、傲慢、暴躁

金、木、水、火、土五种人格

人格类型

生理解剖特点

心理特点

金型

肤色白，面方头小，
肩窄腹小手足小

清白廉洁，急躁刚强，认真严肃，
果断利索，态度坚定

木型

肤色苍白，头小面长，
肩宽背直，身体弱小

勤劳，多忧虑

水型

肤色黑，面粗头大，
肩小腹大

无所畏惧，不够廉洁

火型

肤色赤红肌肉宽厚，
脸尖头小、手足小
肤色偏黄头大面圆，
肩丰腹大身体匀称

真诚朴实，认识事物清楚，
爱美，多忧虑，缺乏信心

土型

助人为乐，安定，爱交际，
诚恳忠厚，不依附权势



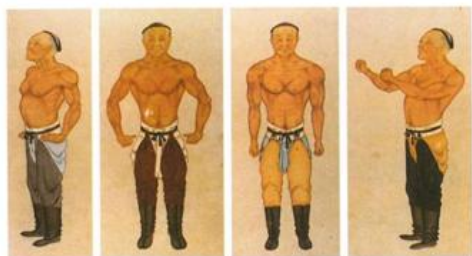
▲ 明·武侯高卧图



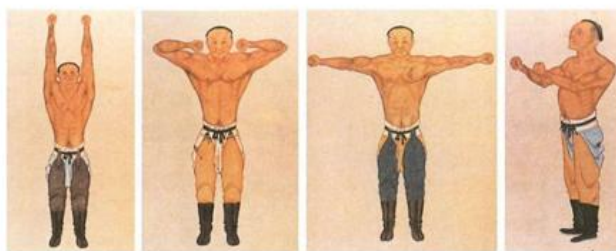
▲ 金·磁州窑黄褐釉芦雁虎形枕



▲ 明《锦身机要》陈抟睡功图



▲ 清·炼外丹图第一套(从左到右为 1-4 式)



▲ 清·炼外丹图第一套(从左到右为 5-8 式)



▲ 齐白石绘高僧焚香图



▲ 北魏·坐禅佛像



▲ 清·十二度按摩图(5)



▲ 清·十二度按摩图(6)



▲ 清·十二度按摩图(5)



▲ 清·十二度按摩图(6)

39



▲ 明《补遗雷公炮制便览》蜀椒



▲ 明《本草品汇精要》韭菜



▲ 明《本草品汇精要》生姜



▲ 明《本草品汇精要》大枣



▲ 明《本草品汇精要》杨梅

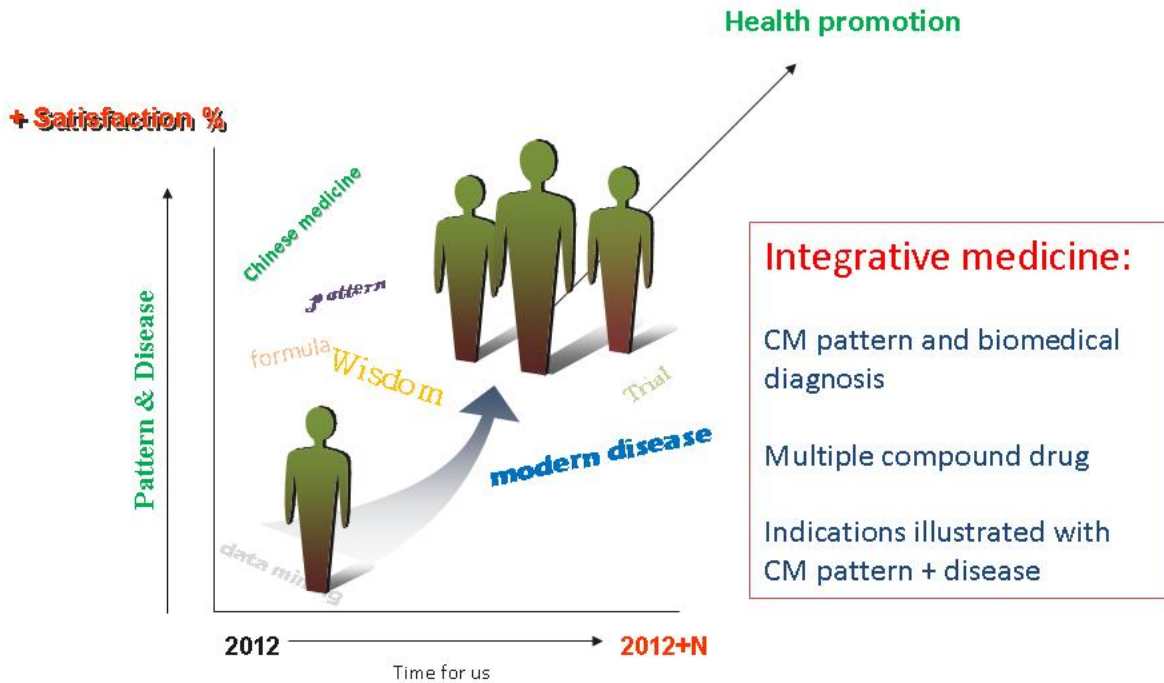


▲ 明《本草品汇精要》赤小豆



► 清·杨柳青年画：诗莞蒿诮和螃蟹咏(温酒)

40

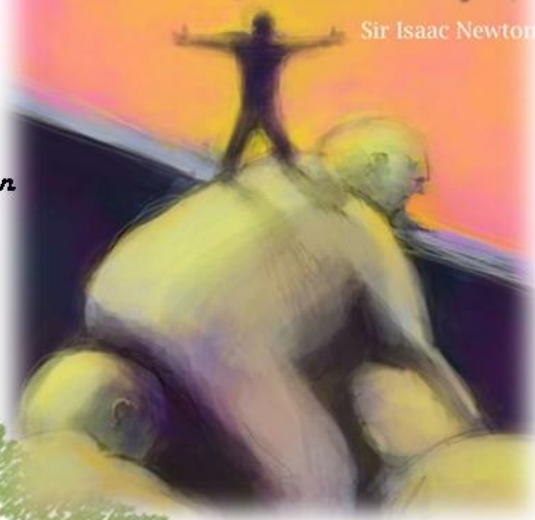


If I have seen further it is By standing on the shoulders of giants

Isaac Newton

If I have seen further it is by standing on the shoulders of giants.

Sir Isaac Newton



Thank You