

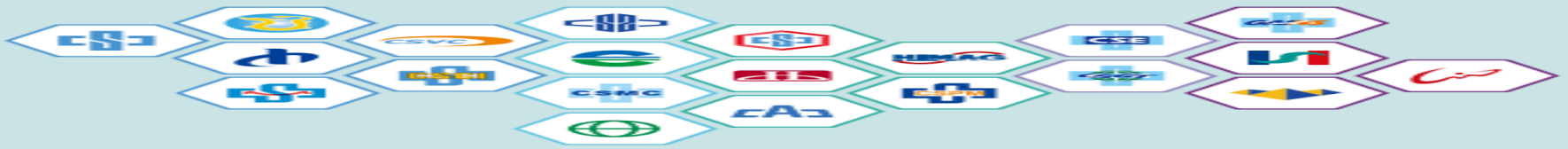
Occupational Health Services at CSC



- Reporter:
Richard Liu
KMUH intern, resident and fellow of GI surgery
KMHH ER staff
CSC clinic director
e-mail: a2401@mail.csc.com.tw



- CSC(China Steel Corporation), located at Kaohsiung, Taiwan, was founded in December **1971**.
- Annual production: around **10 million tons**
- CSC and its 21 subsidiaries constitute the “CSC Group” in five business areas: steel, engineering and construction, industrial materials, logistics, and services & investments.
- Employees: **9932** (male: 9682, female: 250)



- The former CEO said:

“Without safety, everything is zero.”

“Employees’ health is our most important property.”

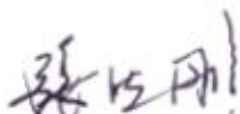
- We have been perfecting the safety and health system for years, and won the Safety and health excellence recognition award 2012 from worldsteel association.

SAFETY AND HEALTH EXCELLENCE RECOGNITION AWARD 2012

“Nothing is more important than the safety and health
of people who work in the iron and steel industry”

China Steel Corporation

is recognised for excellence in its commitment and innovation
in the pursuit of Zero – an injury free, illness-free and healthy workplace



Xiaogang Zhang
worldsteel Chairman



Edwin Basson
Director General



Henk Reimink
GM - Safety, Technology and Environment

worldsteel

A S O C I A T I O N



worlds



- I. Clinic
- II. Health exam and follow-up
- III. Occupational service at job sites
- IV. Health promotion plans
(fat burning weight loss plan,
telemedicine)

I. CSC Clinic



Building



Departments

- Registration
- Emergency room
- Health exam and consulting
- OPD
- Pharmacy
- Laboratory
- X-ray





OPD service

- **Family medicine**
- **Internal medicine**
- **Surgery**
- **Dentistry**
- Cardiology
- Endocrine
- Hepatology
- Chest
- **Psychiatry**
- Dermatology
- ENT
- Ophthalmology
- Fitness
- Quit smoking
- Occupational medicine
- Nutrition and exercise consulting

Personnel

- 17 Doctors
- 14 Nurses
- 3 Pharmacists
- 6 Officers
- 3 Medical technologists
- 1 Dietitian
- 1 Exercise instructor
- Health exam team (15 persons from KMUH)



Registration



OPD



Dental OPD



Pharmacy



Emergency room



Equipment

- AED
- Audiometry
- Automatic analyzer
- Bone ultrasonometer
- **Digital X-ray**
- Defibrillator
- ELISA
- EKG
- **Inbody**
- Pneumo tonometer
- **Resusci Annie**
- Respirator
- Slit lamp
- Spirometer
- **Ultrasound**
- Vital sign monitor



Digital X ray



Ultrasound



Lab



Sterilizer



Our service

- First aid
- OPD, vaccination, blood donation
- Epidemic disease control
- Health exam: ordinary and special (chemical, noise, dust..)
- Occupation medicine service
- Health promotion, women's health care, lectures, CPR training



Health consulting



Blood donation



Fire practice



A photograph of a steel mill. In the foreground, a large, glowing red metal slab is being processed on a conveyor system. The background shows a complex industrial environment with various machinery, pipes, and structural elements. The lighting is dim, with the primary light source being the heat of the metal, which creates a strong orange-red glow. The overall scene is industrial and somewhat dark.

II. Health exam and follow-up

Health exam items

- Past history, physical exam, waist circumference
- Eyesight, ocular pressure
- Hearing
- Chest X ray (**PA + Lat.**), EKG, lung function
- Abdominal sono
- Urine and stool routine
- CBC, GOT, GPT, GGT, BUN, CRTN, Uric acid, Cholesterol, **HDL, LDL**, TG, Na, K, Cl, Lead, HBs-Ag, Anti-HCV, T3, T4, TSH, AFP, urine cadmium, GFR
- Inbody, bone density
- Tumor marker (selective)



Health exam frequency

- < 30 Y/O : every 3 years
- 30-45 Y/O : every 2 years
- > 45 Y/O : every year
(Average age: 50 Y/O)
- newcomer & expatriate
- seafarers



Controlled items and range

item	yellow	red
High BMI	24-35	> 35.1
Low BMI	15.1-18	< 15
High systolic p.	141-180	> 181
High diastolic pressure	91-110	> 111
Low systolic pressure	81-89	< 80
Low diastolic pressure	51-60	< 50
Hyperglycemia	100-250	> 251
Hypoglycemia	46-60	< 45
Anemia	10.1-13.9	< 10
Leukocytosis	10-15	> 15.1
Leukocytopenia	3.1-4	0-3
Elevated GPT	45-400	> 401
Elevated Creatinine	1.4-5	> 5.1
Hypercholesterolemia	201-300	> 301
Hypertriglyceridemia	201-500	> 501

Health exam (I)



Health exam (II)

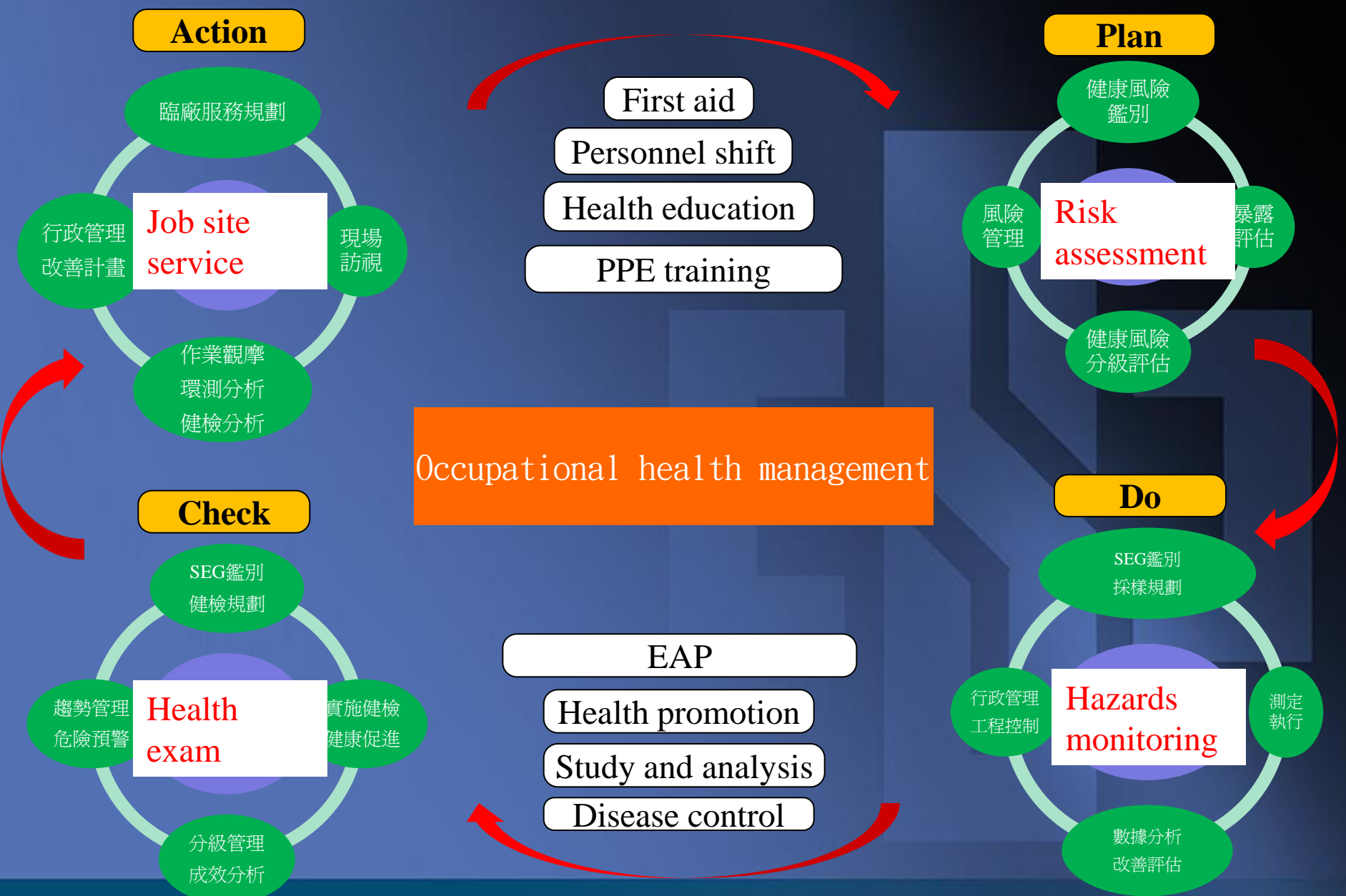


Major problems

- **Metabolic syndrome**
- Cancer
- Mental problem
- Infectious disease (TB, Norovirus...)

The background of the slide is a photograph of an industrial setting, likely a steel mill. On the left side, there is a large, bright orange and yellow glow from molten metal being processed. The rest of the image shows a complex network of metal structures, pipes, and machinery, all illuminated by warm, yellowish industrial lights. The overall atmosphere is one of a busy, high-temperature manufacturing environment.

III. Occupational medicine service at job sites



自主管理活動 推行30週年暨 第90屆成果發表會

CSC started CDA (Creative Development Activities) since 1980





問題點 3-1
馬達重達 180 公斤，過重
腰部扭傷害



問題點 3-2
鋼棒無法固定馬達吊耳
上，滑動夾傷手部



問題點 3-3
扛搬重物失衡，跌倒摔傷

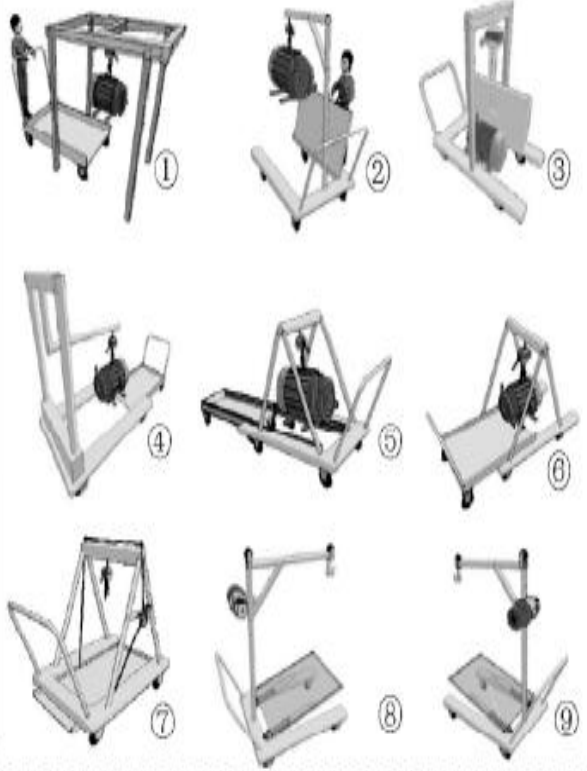


問題點 3-4
鋼棒有尖銳物，刺割擦傷



問題點 3-5
推運撞及不平地面，馬達
翻落壓傷

設計輔助吊搬機具提出九項構思



選擇 ② 與 ⑤ 結合設計

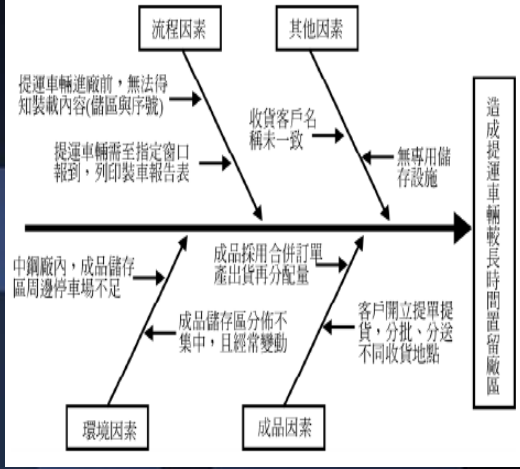


F型吊架 (創意：吊架朝油壓缸設計)
C型槽車與抽屜式底盤 (創意：底盤朝滑軌式設計)

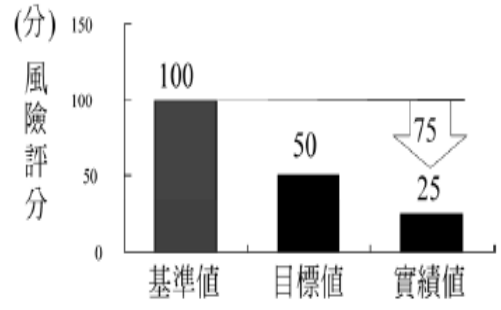
研發自製省力吊搬機
省力吊搬機主要架構：
台車主體
吊搬裝置
手動油壓缸
伸縮底盤



(三)魚骨圖



CDA examples



道路施工管制作業 高風險作業 勞檢處特定作業
單位 施工日期: 103/03/31 ~ 103/03/31 查詢

Real time monitoring of high risk tasks

COMBAT INFORMATION CENTER

中國鋼鐵股份有限公司
廠區佈置圖



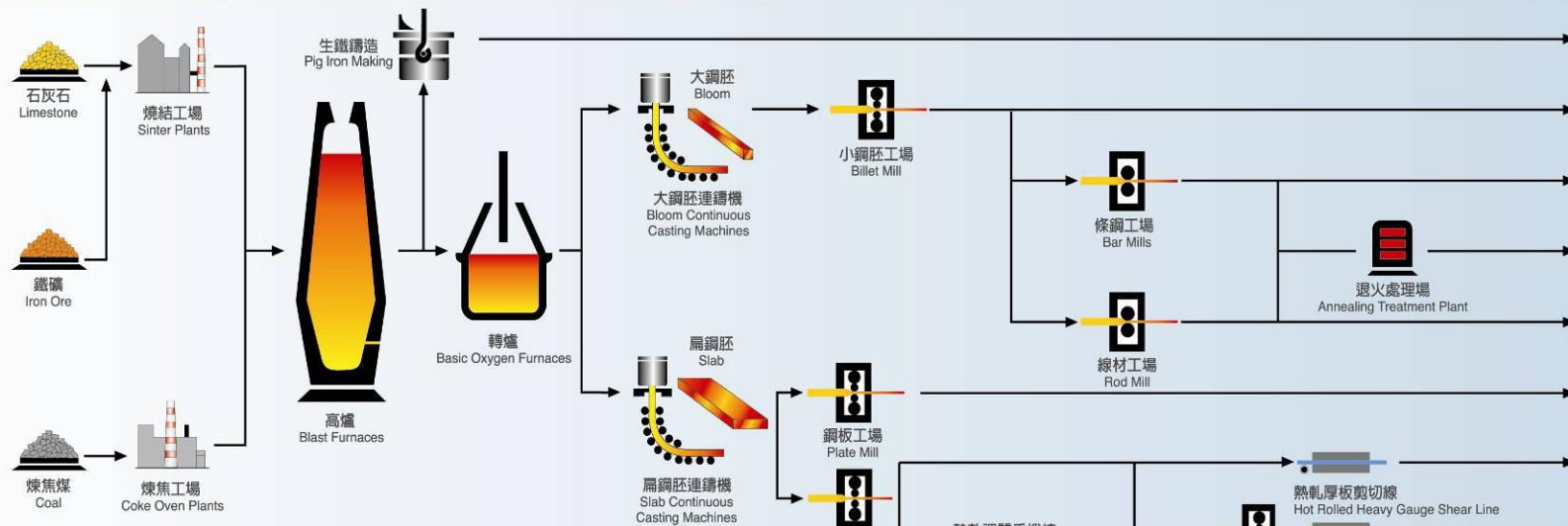
原料 RAW MATERIALS

煉鐵 IRON MAKING

煉鋼 STEELMAKING

軋鋼 ROLLING

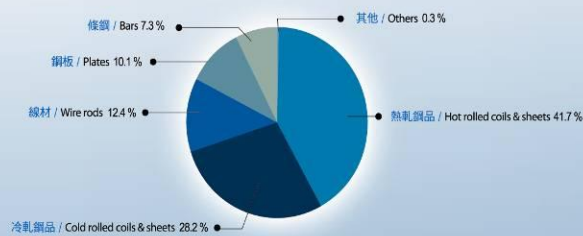
產品 PRODUCTS



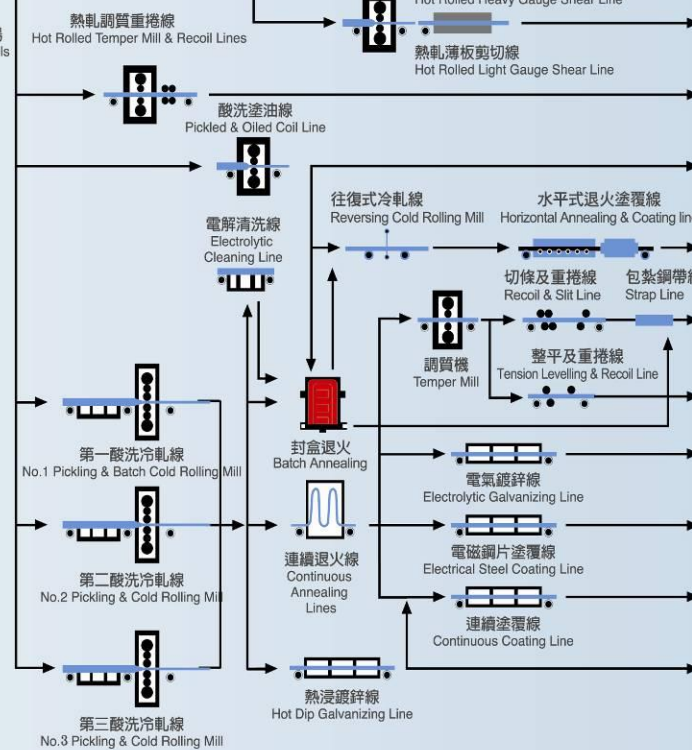
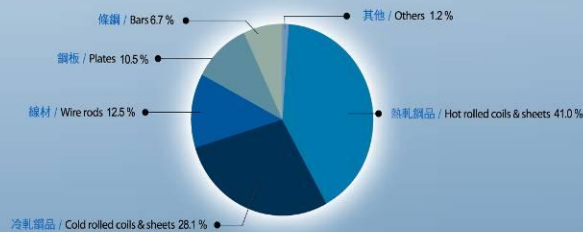
- 生鐵 Pig Iron
- 小鋼胚 Billet
- 條鋼 Bar
- 球化線材 Spheroidized Wire & Rod
- 線材 Wire Rod
- 鋼板 Plate
- 熱軋鋼板 Hot-Rolled Plate
- 熱軋鋼片 Hot-Rolled Sheet
- 熱軋鋼捲 Hot-Rolled Coil
- 酸洗塗油鋼捲 Pickled & Oiled Coil
- 高級電磁鋼捲 Electrical Steel Coil
- 包紮鋼帶 Strap
- 冷軋鋼捲 Cold-Rolled Coil
- 電鍍鋅鋼捲 Electrogalvanized Coil
- 電磁鋼片 Electrical Steel
- 電磁及彩色鋼片 Electrical Steel & Colored Sheet
- 熱浸鍍鋅鋼捲 Galvannealed and Galvanized Coil

各類鋼品生產銷售量百分比
Percentage of steel production and sales volume by product

各類鋼品銷售量 / Sales Volume



各類鋼品生產量 / Production Volume



Process	Risk of injuries
material	falling、twisting、hypoxia & intoxication
transport	twisting、collision、sprain
iron making	twisting、collision、burn、hypoxia
steel making	twisting、cutting、burn、hypoxia
rolling	twisting、cutting、burn
fix	falling、electric shock、cutting、collision、sprain、burn、hypoxia

Environment monitoring

- Air- conditioning (all)
- Dust (W1、W2、W3)
- Lead (Y643、Y532、W65)
- Tetra methyl lead
- Organic solvate (T2-T6、W1-W6、Y4、Y5)
- Special chemicals (T1、W2、W5、W6、Y4、Y5)
- Radiation
- Noise (all)
- High temperature (W2-W5、Y4、Y5)
- Tunnel

Chemicals monitoring

- (TOP 5) :

CO₂ 742

Dust 119 (W1、W2、W3)

HCl 36 (Lab、pickling、water plant)

Benzene 21 (W21、W25)

H₂SO₄ 15 (W5)

Occupational Safety and Health Act

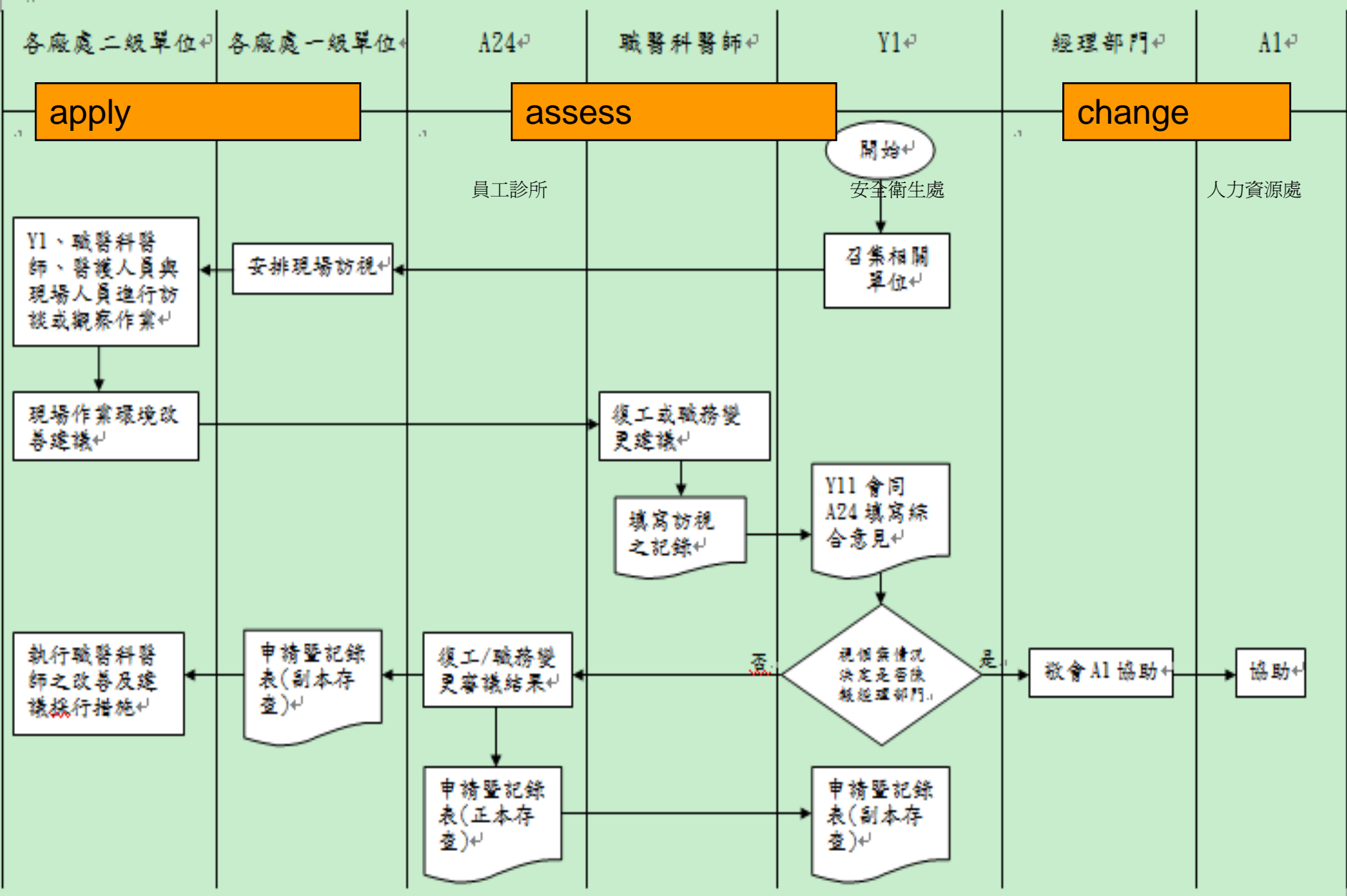
July.3.2013 Modified

- **Article 20** ...The laborers are obligated to accept the examinations in Paragraph 1.
- **Article 21** The employers shall not employ laborers to engage in a particular type of work for which the physical examination in the preceding Article finds the laborers to be unsuitable for employment. **Where a health examination finds an abnormal condition in laborers, medical personnel shall provide the laborer with health guidance...**

Occupational Safety and Health Act

July.3.2013 Modified

- **Article 21** ... Where the results of a physician's health assessment indicate that a laborer is not suited for his or her original work, the physician's recommendations shall be referred to in **changing** the laborer's job sites, reassigning the laborer to different duties, or shortening his or her working hours, and adopting health management measures.



Abnormal health exam results in special workplaces (2012)

47 cases with abnormal health exam results in special workplaces were suspected occupation-related.

(radiation: 1、chemical: 1、high temp:1、noise 44)

They were reviewed by occupational medicine doctor, and the results showed no relation.

Case 1

- # A contract worker with hypertension and CAD
- # Hot rolling quality control unit
- # Suspect high temperature environment

Hot rolling quality control



panel



office



check

Assessment

- # Environment: It is not a high temperature place according to the law.
- # Job description: panel control in the office, 15-40 min check/roll, 8 hours/day, Max. 16 rolls/day
- # Suggestion: no contraindication, keep good BP

Case 2

Some low back pain cases in the
2nd hot strip mill: coiling
area, rolling area, hanging area

Coiling area



lubrication



cleaning

Roller exchange area

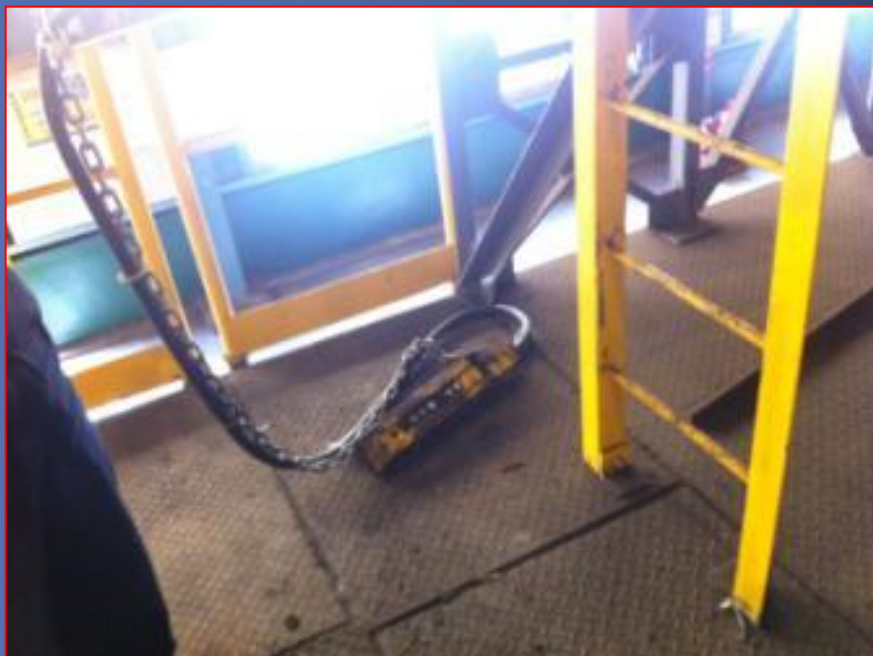


roller



panel

Hanging area



hanging



maintenance

Assessment

- # Coiling area: lubrication and cleaning
- # Rolling area: change the roller
- # Hanging area: hanging and maintenance
- # No long-time bending, no heavy lifting
- # Suggestion: no relation

Other cases

- Parkinson's disease (bus driver), shifted
- DM with triopathy (crane operator), retired



iv. Health promotion plan





Gym



Fat burning weight loss plan





中鋼公司

Y4 強棒 守護健康

專業的師資 打造您個人專屬的健康顧問
中鋼的亞力山大 等待您的加入！

我們將免費為您安排體態檢測，依照個人體質為您獨立運動處方與飲食營養課程、週生動的醫療課程更讓您開心樂活，如果您有特別的健康需求，更有一對一醫療諮詢，表現優異者還有精美禮物送給您！讓我們一起守護健康，無負擔。

專業師資



王肇齡 ■ 高雄醫學大學保健科主治醫師



黃孟娟 ■ 高雄醫學大學副教授暨營養室主任



陳昭彥 ■ 高雄醫學大學運動醫學系助理教授



-健康守護天使-診療所護理人員
-您的健康伙伴-

97年3月 即將引爆

Trust US, You Can Make it!

主辦單位：診療所健康管理中心
協辦單位：軋鋼二場、高醫保健科
健康專線：分機5227洽李小姐

中鋼公司

連續安打 餐餐健康

營養均衡最重要 · 三低一高有訣竅

6 大類食物 成人每日攝取量

多吃加工少糖
五穀雜糧類
如糙米、可轉製
成精食如胚芽
米、全粒麵粉等
應少吃



少油精工料理、多選擇
魚類、蝦類及豆腐



多吃蔬菜，除了增加
纖維，還能改善便秘
也可以增加飽足感，
降低食欲誘惑。

料理要特別，盡量少油，並選用植物油，
例如：花生、橄欖油等。



深茶小茶由淡變濃，無糖更甜。

3 低一高 低糖、低油、低鹽、高纖



可減少熱量
避免三酸甘油酯過高
應選擇低糖食品如
及常食低糖類

可減少熱量攝取
降低總膽固醇(LDL)
應選擇低油油炸、
並用天然植物油

可改善血壓與
以天然調味料如土
罐頭調味加工食品類



纖維豐富的食物中纖維量與糖類比
有幫助降低血中膽固醇
全穀類(糙米、五穀米)可替代精製麵粉



●主辦單位：診療所健康管理中心 ●協辦單位：軋鋼二場、高醫保健科 ●健康專線：分機5227洽李小姐

變化球路 體能紅不讓

運動一分鐘多活四分鐘

運動的好處

- 維持理想體重
- 提升胰島素敏感度，預防高血糖
- 提升好的膽固醇 (HDL)
- 促進鈣質的吸收，預防骨質疏鬆
- 增加肌耐力減少酸痛發生
- 高自信降低憂鬱及焦慮發生
- 預防高血壓，心臟病，腦中風

運動套餐任你挑，搭配完整更健康



增強心肺功能的運動

慢跑、快走、游泳、騎自行車、舞蹈、劍繩、球類運動、太極拳、外丹功、有氧運動

增強心肺功能及血液循環，預防高血壓、糖尿病及心血管疾病，增強抵抗力預防感冒



增強肌肉耐力運動

仰臥起坐、上下樓梯、伏地挺身

使肌肉發揮最大的功能及持久力，減輕肌肉疲勞及關節疼痛，提升免疫防禦率



增強肌肉及關節柔軟度運動

伸展操、外丹功太極拳、瑜珈

放鬆緊繃的肌肉及僵硬的關節，讓您輕鬆自如減少扭傷、拉傷及腰酸背痛等運動傷害

運動強度

運動強度一般而言要吃力到有點吃力的程度
若是感覺輕鬆表示運動強度不夠，建議應加快速度
若是非常吃力，則要將速度放慢或增加休息之頻率

貼心小提示

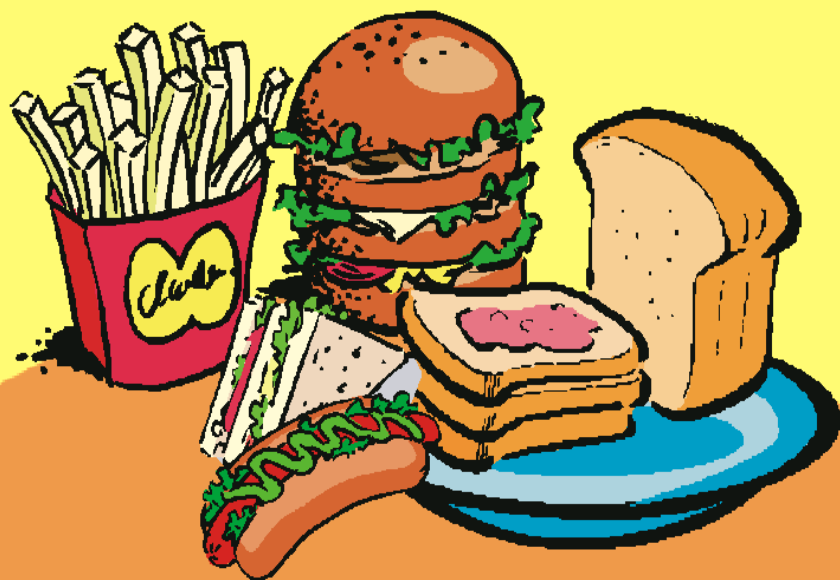
每周固定3-5次的運動，可交替運動之種類，如游泳、伏地挺身、瑜珈交替做，更能達到全身運動的效果，也是免運動傷害。



- 主辦單位：診所所健康管理中心
- 協辦單位：鳳鋼二廠、高醫保健科
- 健康專線：分機5227洽李小姐

個人營養諮詢!

Y4健促專案

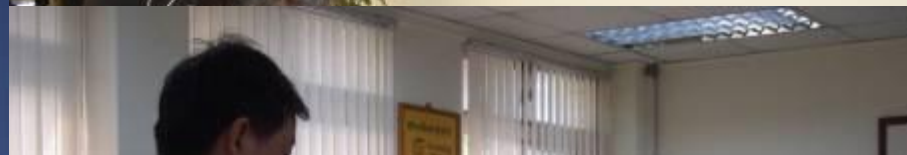
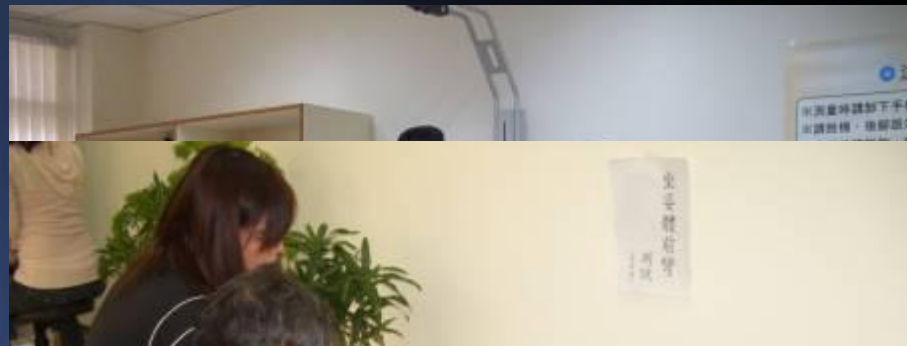


<p>主題</p>	<p>1 新陳代謝症候群飲食守則 認識食物六大類</p>	<p>2 均衡飲食的操作型定義 體重管理</p>	<p>3 高脂血症飲食策略 高血壓飲食</p>	<p>4 血糖不耐飲食策略</p>
<p>照片</p>				





- (InBody) analysis
- Exercise instruction



商國民健康體能測定項目及

建議運動「習識」等字有研建議。



- Speech
- Total C
- HDI



Achievement

- 2011
300 participants, 511.7 kg
- 2012
324 participants, 752.6 kg
- 2013
246 participants, 715 kg

甩開負擔、健康100 健康減重成果



來發表會議程

議程

- 1. 歡迎嘉賓致詞 - 12:30
- 2. 健康減重心得 - 13:00
- 3. 健康減重心得 - 13:30
- 4. 健康減重心得 - 14:00




Bureau of Health Promotion Prize

健康  臺灣動起來

全國肥胖防治成果發表會

躍動躍健康 全民齊步走

主辦單位： 行政院衛生署國民健康局



Call center at KMUH



會員異常狀況聯繫



回診安排
領藥協助

去電關心
健康顧問



每月定期廠區訪視
個人&團體衛教諮詢



Monitor at job sites



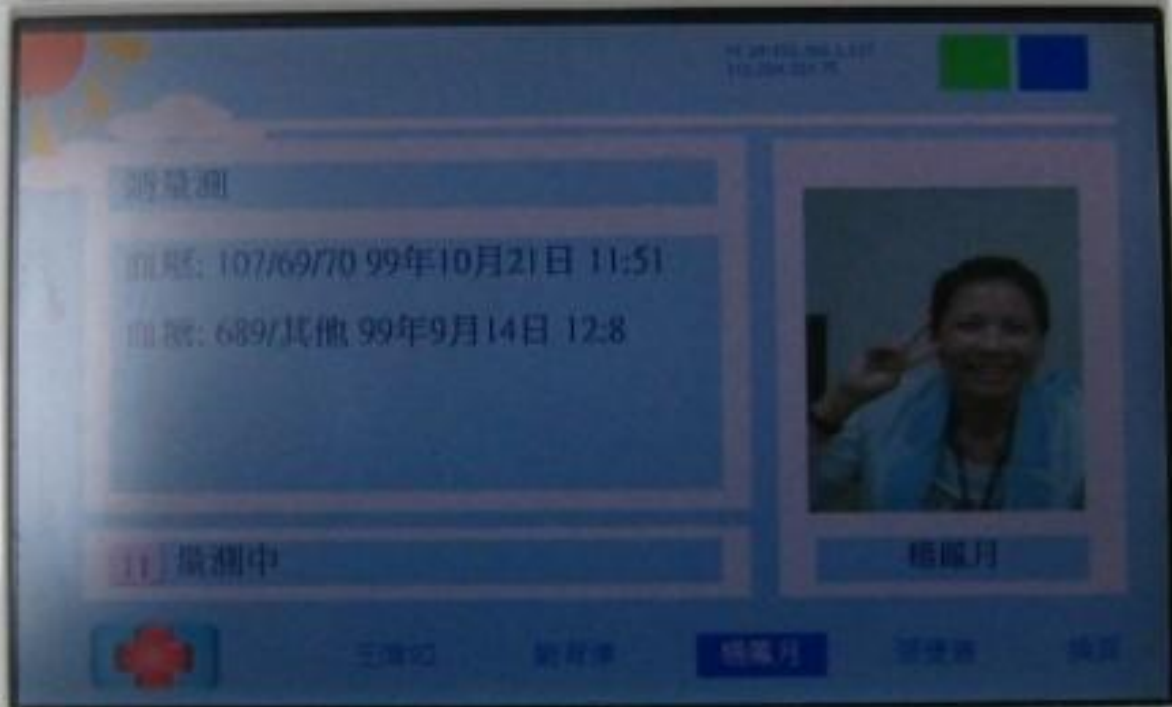
健康狀況追蹤與監測

高醫社區健康照護中心

24小時 諮詢專線 07-3127958.3127978

高醫社區健康照護中心

24小時 諮詢專線 07-3127958.3127978



Flu control policy

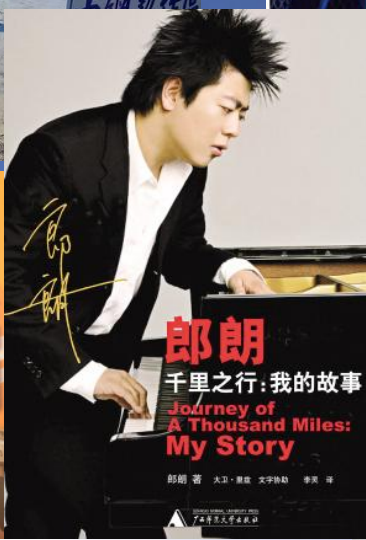
- Visitors and contract workers control
- Environment control
- Education
- Fever screen
- Vaccine and Tamiflu



Mt.Jade 3,952 m



2013.10.28



中鋼集團大樓

總部啓用音樂會 PART II

2013 11/1 (五) 晚間7:30

演出地點：總部大樓1F西南側

演出：KSO 高雄市交響樂團
指揮：楊智欽

小號獨奏：安德烈·朱費雷蒂

財團法人高雄市愛樂文化藝術基金會
Kaohsiung Philharmonic Cultural & Arts Foundation

中鋼集團教育基金會



Goal

- Health promotion and chronic disease prevention
- High quality health exam
- Telemedicine
(early detection of heart attack)
- AED (1 set / 1,000 employee)
- Hearing protection plan



Thank You



CHINASTEEL

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM 