

# **Analysis of the Korean Medical Device Market**

**April, 2011**

# Medical Device Information

**Korea Health Industry Development Institute**

<http://www.khidi.or.kr>

**Korea Medical Devices Industry Association**

<http://www.kmdia.or.kr/>

**Korea Medical Devices Industrial Cooperative Association**

<http://www.medinet.or.kr/>

**Korea Testing Laboratory Medical Device Information & Technology Center**

<http://www.ktlmedi.re.kr>

# Current situation of Korean health & medical environment

Being entirely ruined by Korean war in 1950, Korea has rapidly industrialized since 1961, when all-out efforts for economic development were first inaugurated.

That year, the government systematically arranged mid-and long-term economic development plans, which turned the nation from being a traditional agricultural county into one of industrialized countries.

For instance, Korea's gross national product increased from USD 3.1 billion in 1960 to USD 8.1 billion in 1970 to USD 457.6 billion in 2002 (a 257 fold growth in three decades).

As a sign of its financial success, Korea successfully hosted the 1988 Seoul Olympic and the 2002 World Cup.

# Current situation of Korean health & medical environment

Besides, national product per capita surpassed USD 10,000 in 1995, reaching USD 10,548 in 1996.

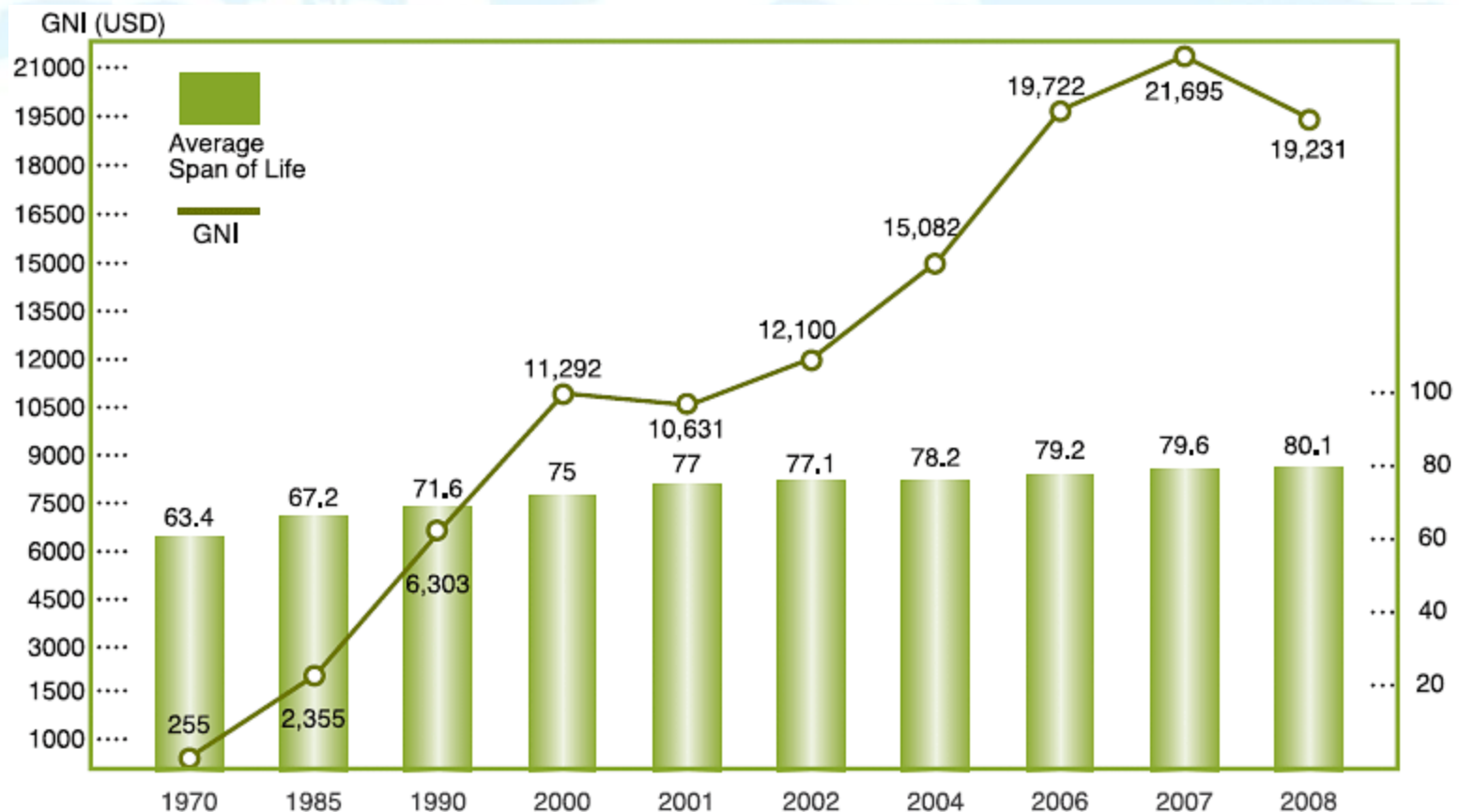
But the unprecedented economic crisis in 1998 decreased the number to USD 7,000.

Despite that, Recorded **USD19,231 in 2008, Korea is recovering the difficult situations fastly.**

In the mean time, the number of people eligible for medical insurance rose sharply, leading to a steep increase in medical institutions and medical manpower available.

Thus, the pattern of the domestic demand for medical equipment changed dramatically as the national average life span jumped to 75 years in 2007, from 52.3 years in 1960.

# Korea's GNI(Gross National Income) and National Average Life Span



Source: Korea Medical Devices Industrial Cooperative Association

# Number of Korean Medical Service Institutions

Year	Number of Medical care centers			Dental Hospital Clinics	Oriental Hospitals	Affiliated hospitals	Et.al Hospitals	Total
	General hospitals	Hospitals	Clinics					
1995	266	398	14.343	8.304	5.997	246	219	29.773
2000	285	581	19.472	10.527	7.412	185	203	38.665
2001	268	599	20.819	10.616	7.630	169	175	40.276
2002	284	691	23.299	11.200	8.232	169	154	44.029
2003	283	798	23.502	11.989	8.885	150	165	45.772
2004	282	855	24.491	12.075	9.350	158	167	43.378
2005	290	971	25.412	12.634	9.911	187	152	49.566
2006	295	1.213	26.078	12.942	10.436	172	150	51.286
2007	302	1.538	26.265	13.431	11.033	182	163	52.914

Source: Korea Medical Devices Industrial Cooperative Association

# Number of Korean Doctors

Year	Doctors	Dental Doctors	Oriental Doctors	Nurses
1995	57.188	13.681	8.714	120.415
2000	72.503	18.039	12.108	160.295
2001	75.295	18.887	12.794	170.845
2002	78.609	19.672	13.662	181.800
2003	81.328	20.446	14.553	192.480
2004	81.998	20.772	14.421	202.012
2005	85.369	21.581	15.271	213.644
2006	88.214	22.267	15.918	223.781
2007	91.475	23.126	16.732	235.687

Source: Korea Medical Devices Industrial Cooperative Association

# Present Situation of Korean Medical Device Industry

Korea's medical equipment industry took shape in the early **1970s** when X-ray systems were first localized. Before then, **consumable medical supplies**, such as disposable syringes and bandages, were the major locally produced items.

In the **1980s**, the government launched a successful policy to localize highly advanced **diagnostic equipments** such as ultrasound diagnostic systems, magnetic resonance imaging (MRI) equipment, computerized tomography (CT) equipment.

Entering the **1990s**, the government regarded the medical equipment industry as the **strategic area** to challenge and has constantly induced local manufacturers to develop new, up-to-date items in the sector.



# Present Situation of Korean Medical Device Industry

**At the moment, high-end items** such as digital X-ray systems, MRI, CT and 3-dimensional ultrasound diagnostic systems are being locally produced.

Encouraged by big acceptance from abroad for their technology products, domestic makers are spurring the promotion of their goods to more than 50 countries, including the U.S.A. and European nations.

The rapid development of Korea's **electro-medical equipment industry** in a short span of time stems from the following facts :

**First**, abundant technical experts were secured by promoting in colleges and graduate schools the relevant subjects such as electronics and medical engineering.

# Present Situation of Korean Medical Device Industry

**Second**, the electronic field in Korea, including semiconductors, industrial electronics and electronic parts, is as fully developed as that in advanced countries.

**Third**, the nation's economic development resulted in increase in the number of hospitals and swelling demand for medical equipment, creating a large local market. Fourth, domestic makers have successfully made inroads into overseas markets, thanks to their high reliability, thus providing unrivaled business opportunities.

Based on this market environment, domestic electro-medical equipment manufacturers now emphasize continued market exploration in overseas as well as at home.

# Medical Devices Related Establishment



Manufacturers of medical devices, etc - by province(city) : 2006-2009

Unit : Place

Year, Province	Total	Manufacturing	Import	Repairer	Sales	Leasing
2006	4,114	1,887	1,315	912	-	-
2007	25,065	1,883	1,456	964	20,754	8
2008	26,642	1,964	1,571	1,100	21,990	17
2009	26,887	2,031	1,609	1,192	22,031	24
Seoul	8,999	458	1,110	542	6,883	6
Busan	2,407	96	41	86	2,184	-
Daegu	753	66	27	53	604	3
Inchon	924	105	27	29	763	-
Gwangju	1,153	29	8	49	1,067	-
Daejon	3,195	63	33	63	3,036	-
Ulsan	60	5	1	13	41	-
Gyeonggi	4,112	870	294	198	2,750	-
Gangwon	738	102	17	24	595	-
Chungbuk	545	55	17	13	460	-
Chungnam	719	64	16	18	621	-
Jonbuk	954	22	7	32	892	1
Jonnam	152	8	-	12	132	-
Gyeongbuk	682	33	5	22	614	8
Gyeongnam	1,284	53	6	26	1,193	6
Jeju	210	2	-	12	196	-

Source : Korea Medical Devices Industry Association

# Medical Devices Related Establishment



## Korean Medical Device Manufacturer

Unit : Item

Category	2003	2004	2005	2006	2007	2008	2009
Number of Registered manufacturers	1,421	1,681	1,783	1,887	1,883	1,964	2,031
Number of Registered products	1,223	1,308	1,019	1,010	832	953	1,096

Source : Korea Food and Drug Administration

# Medical Devices Related Establishment



## Manufacture, Export and Import

Unit : hundred million won

Category	2003	2003	2005	2006	2007	2008	2009
Volume of Manufacture (A)	13,271	14,781	17,042	19,492	22,169	25,252	17,643
Volume of Export (B)	6,147	6,520	7,160	7,810	9,591	12,481	15,190
Volume of Import (C)	13,593	14,708	15,461	17,193	20,014	23,409	23,988
Market Size A+C-B	20,717	22,969	25,342	28,874	32,593	36,179	36,440

Source : Korea Medical Devices Industry Association

# Medical Devices Related Establishment



Number of approved and reported medical devices : 2003-2009

Unit : Item

Year	Manufacturing		Import	
	Permission	Declaration	Permission	Declaration
2003	1,223	497	1,612	3,797
2004	1,308	624	1,669	2,427
2005	1,019	837	1,269	3,617
2006	1,008	984	1,355	2,147
2007	731	920	1,167	2,684
2008	950	840	1,274	2,597
2009	1,067	1,009	1,362	2,622

Source: KFDA, Diagnostic Medical Devices Division

# On the way to improve the trade balance of domestic medical devices market!

**The rate of export increase: 21.7%, the rate of import increase: 2.47%**

- ◆ Last year despite the global economic depression, the export of domestic medical devices has increased by 20%, on the other hand, the increase of import has largely slowed down. So, it showed that the trade balance was improved.
- ◆ As a result of analysis of 'production, export and import result of medical devices on 2009 year' conducted by Food and Drug Administration,
  - On 2009 year, the total output of domestic medical device industry was 2 trillion 764 billion won, which is 9.47 percent higher than the last year. And the total market size of medical devices was 3 trillion 644 billion won, which is 0.72 percent higher than the last year.
  - ※ The level of global market size on 2009 year was 224 billion dollar.

# On the way to improve the trade balance of domestic medical devices market!

- On 2009 year, the export scale of domestic medical device was 1 trillion 519 billion won, which was turned out to be 21.7 percent growth compared to the 2008 year (1 trillion 248 billion won). Despite the global economic depression, Strong growth has been shown.
  - ※ Annual average rate of the export increase: 18.43%
  
- On the other hand, import was 2 trillion 398 billion won, which was only 2.47 percent growth compared to the 2008 year (2 trillion 340 billion won). The rate of import increase was shown to be significantly lower.
  - ※ Annual average rate of the import increase: 10.28%
  
- Accordingly, the trade deficit of 2009 year was 879 billion won, which was 19.49 percent decrease compared to the last year (1 trillion 92 billion won). On 2009, the trade deficit which had increased for the last five year turned into decline.



# On the way to improve the trade balance of domestic medical devices market!

- ◆ About the production record among the items of domestic medical device, ultrasound imaging system (286 billion won) and dental alloys were ranked first and second, respectively.
- About the export record, ultrasound imaging system (226 million dollars) maintained ranking number one. Personal heating pad system (99 million dollars) and Ophthalmic Spectacle Lenses (74 million dollars) were followed the next. For the last three years, the ranking 1, 2 and 3 of export items were the same.
- ※ The high rank export items for the last three years ('07, '08, '09 year) :  
ultrasound imaging system (ranking No.1, No.1, No.1), Personal heating pad system (No.3, No.2, No.2), Ophthalmic Spectacle Lenses (No.2, No.3, No.3)

# On the way to improve the trade balance of domestic medical devices market!

- Blood glucose test strip (50.64 million dollars) which ranked fifth in 2008 year was upgraded by one step. Medical probe (50.17 million dollars) which ranked 8th in 2008 became 5th in 2009.
- Last year, the export items entered in the top 20 were medical imaging processing equipment and software (26.36 million dollars), tissue reconstructive material (20.83 million dollars), etc.
- ◆ Food and Drug Administration announced that they would actively promote the advancement of standards for manufacturing and quality control for medical devices (GMP), certification and approval procedure for the purpose of enhancing the export competitiveness of medical devices industry which is growth engine for the new generation.

# Medical Device Industry

(Unit : million won, %)

Category	2004	2005	2006	2007	2008	2009	Average annual growth rate ('04~'09)
<b>Manufacture(A)</b>	1,478,165 (11.38)	1,704,161 (15.29)	1,949,159 (14.38)	2,216,965 (13.74)	2,525,203 (13.90)	2,764,261 (9.47)	13.34
<b>Export(B)</b>	652,044 (6.08)	716,025 (9.81)	781,043 (9.08)	959,094 (22.80)	1,248,138 (30.14)	1,519,027 (21.70)	18.43
<b>Import(C)</b>	1,470,804 (8.20)	1,546,109 (5.12)	1,719,323 (11.20)	2,001,423 (16.41)	2,340,883 (16.96)	2,398,814 (2.47)	10.28
<b>Trade Balance(E)</b>	-818,760 (9.96)	-830,084 (1.38)	-938,280 (13.03)	-1,042,329 (11.09)	-1,092,745 (4.84)	-879,787 (-19.49)	-
<b>Market Size(F)</b>	2,296,925 (10.87)	2,534,244 (10.33)	2,887,438 (13.94)	3,259,294 (12.88)	3,617,947 (11.00)	3,644,047 (0.72)	9.67
<b>Import Share(G)</b>	64.03	61.01	59.54	61.41	64.70	65.83	-

※ Trade Balance(E)=(B)-(C),

Market Size(F) = (A)-(B)+(C),

Import Share(G,%) = (C)/(F)×100

Source : Korea Medical Devices Industry Association(KMDIA)

# Medical devices Industry

## production of medical devices : 2003-2009

Unit : place, item, million won

Year	Medical Devices		
	Number of manufacturers	Number of products	Amount
2 0 0 3	1,012	4,992	1,327,106
2 0 0 4	1,500	5,862	1,478,165
2 0 0 5	1,596	6,329	1,704,161
2 0 0 6	1,624	6,639	1,949,159
2 0 0 7	1,662	6,899	2,216,965
2 0 0 8	1,726	7,367	2,525,203
2 0 0 9	1,754	8,003	2,764,260

Source: KFDA, Medical Device Management Division

Note : Manufactures means the manufactures which have producing results.

# Medical devices Industry

## Production by medical devices companies - top ten companies : 2007-2009

Unit : 100 million won

Company name	2007	2008	2009	Year-on-year Increase rate
Medison CO., LTD	184,313	229,916	203,558	-11.5
CERAGEM CO., LTD.	55,164	84,197	111,298	32.2
Osstem Implant	88,350	99,159	85,245	-14.0
SHINHUNG CO., LTD.	58,754	78,663	75,351	-4.2
VATECH	32,040	48,738	61,167	25.5
Siemens Ltd. (pohang)	-	26,307	58,217	121.3
HEESUNG CATALYSTS CORP.	37,120	51,066	55,465	8.6
Siemens Ltd.	31,767	55,638	48,565	-12.7
DAEMYUNG OPTICAL CO., LTD.	30,383	36,077	43,527	20.7
Becton Dickinson Korea Ltd.	28,153	29,001	42,397	46.2

# Medical devices Industry

## Ratio of medical devices industry to GDP : 2004-2009

Unit : 100 million won, %

Year	Gross Domestic Product(GDP)	GDP of manufacturing	Amount of manufactured medical devices Products	Ratio to GDP	Ratio to GDP of manufacturing
2004	826,893	205,826	1,478	0.18	0.72
2005	865,241	213,646	1,704	0.20	0.80
2006	908,744	220,940	1,949	0.21	0.88
2007	975,013	238,611	2,217	0.23	0.93
2008	1,023,938	258,638	2,525	0.25	0.99
2009	1,063,059	265,783	2,764	0,26	1,04

Source : KDFA Medical Device Management Division, statics KOREA

# Medical devices Industry

## Manufacturers by production Volume : 2007-2009

Unit : establishment, thousand won, %

Production volume	2007		2008		2009	
	No. of manufacturer	Amount	No. of manufacturer	Amount	No. of manufacturer	Amount
Total	1,662	2,216,965,411	1,726	2,525,202,595	1,754	2,764,260,534
over 10 billion won	42	1,082,686,445	42	1,293,200,123	48	1,466,591,941
5 ~ 10 billion won	53	364,524,842	61	426,796,912	74	512,104,844
1 ~ 5 billion won	231	542,295,975	253	582,393,240	239	543,348,360
100 ~ 1000 million won	532	212,627,713	528	207,593,080	566	226,153,417
below 100 million won	804	14,830,436	842	15,219,240	827	16,061,972

Source: Korea Medical Devices Industry Association

# Imports & Exports of Medical devices

## Exports of medical devices : 2003-2009

Unit : thousand US dollars

Year	Total
2003	515,702
2004	569,635
2005	699,032
2006	817,409
2007	1,032,172
2008	1,132,005
2009	1,190,087

Source: Korea Medical Devices Industry Association



# Imports & Exports of Medical devices

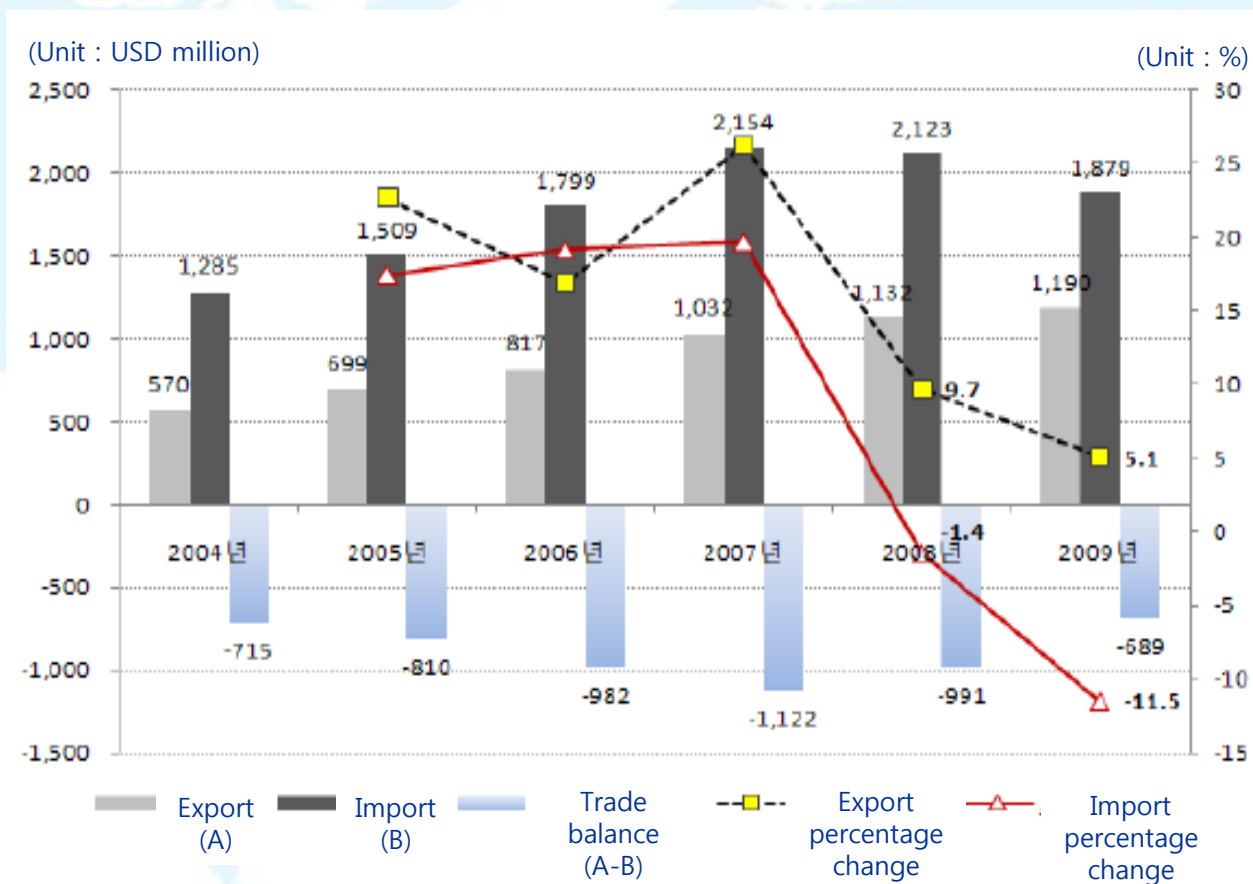
## Imports of medical devices : 2003-2009

Unit : thousand US dollars

Year	Total
2003	1,140,448
2004	1,284,916
2005	1,509,415
2006	1,799,377
2007	2,153,921
2008	2,123,076
2009	1,879,359

Source: Korea Medical Devices Industry Association

# Imports & Exports of Medical devices



Source: Korea Medical Devices Industry Association

# Imports & Exports of Medical devices

## Exports of products - top ten items : 2007 -2009

Unit : thousand US dollars

Products	2007	2008	2009
Ultrasound imaging system	286,291	304,820	226,280
Heating pad system, home use	72,294	87,840	99,264
Ophthalmic Spectacle Lenses	82,201	62,552	74,162
Blood glucose test strip	36,947	37,727	50,643
Medical probes	35,869	30,608	50,178
Soft contact Lenses	24,747	34,915	47,516
Dental Implant	27,794	32,208	35,783
Combinational stimulator for medical use	38,015	40,144	33,312
Computed tomography X-ray system	42,684	24,295	32,016
Digital X-ray imaging system	14,185	29,682	31,973

Source: Korea Medical Devices Industry Association

# Imports & Exports of Medical devices

## Imports of products - top ten items : 2007-2009

Unit : thousand US dollars

Products	2007	2008	2009
Stent	108,850	114,852	92,969
Knee artificial joint	56,144	57,978	66,933
Soft contact lenses	50,669	61,261	60,148
Computed tomography X-ray system	70,301	77,933	55,003
Dialyzers for hemodialysis	56,438	56,148	47,244
MRI system	77,170	73,631	44,621
Accelerator system collimator electron applicator	54,392	38,282	42,147
Ophthalmic Spectacle Lenses	55,771	42,881	41,455
Skin Staple	25,618	31,741	35,791
Utensil for operation	34,789	32,416	31,900

Source: Korea Medical Devices Industry Association

# Imports & Exports of Medical devices

## Country by country Imports of Medical Device : 2006-2009

Unit : thousand US dollars

Country	2006		2007		2008		2009	
	amount of money	Rate	amount of money	Rate	amount of money	Rate	amount of money	Rate
USA	606,622	33.71	745,158	34.60	738,991	34.81	763,130	40.61
Germany	245,726	13.66	305,785	14.20	327,942	15.45	253,916	13.51
Japan	262,856	14.61	300,448	13.95	273,421	1.88	213,004	11.33
Ireland	100,413	5.58	135,753	6.30	163,807	7.72	131,463	7
China	92,280	5.13	116,232	5.40	122,531	5.30	93,702	4.99
Netherlands	79,507	4.42	95,912	4.45	79,590	3.75	47,622	2.53
Switzerland	63,739	3.54	76,128	3.53	77,041	3.63	88,735	4.72
UK	42,925	2.39	46,747	2.17	46,981	2.21	45,108	2.4
France	46,147	2.57	59,650	2.27	45,899	2.16	40,044	2.13
Sweden	28,964	1.61	29,510	1.37	38,605	1.82	30,651	1.63
Italy	39,282	2.18	35,821	1.66	31,593	1.49	26,091	1.39

# Year 2009 volume of manufacture Top 20 products



(Unit : million won, %)

Ranking	Product	Volume of manufacture	Ratio
1	Ultrasound imaging system	286,733	10.37
2	Alloy of noble metal	253,955	9.19
3	Dental Implant	179,144	6.48
4	Sight corrective ophthalmic lens	167,563	6.06
5	Heating pad system, home use	131,439	4.75
6	Image processing system-Software	77,688	2.81
7	Soft Contact Lens	72,260	2.61
8	Medical Probe	70,368	2.55
9	Digital X-ray system	68,919	2.49
10	Combinational stimulator	68,797	2.49

# Year 2009 volume of manufacture Top 20 products



(Unit : million won, %)

Ranking	Product	Volume of manufacture	Ratio
11	Syringes	64,522	2.33
12	Surgical Laser	58,176	2.10
13	CT system	53,713	1.94
14	Dental unit and chair	46,649	1.69
15	Spinal internal fixation system	39,129	1.42
16	Blood glucose test strip	35,538	1.29
17	Intravascular administration set	33,895	1.23
18	Bed for medical use	33,471	1.21
19	Splints	31,685	1.15
20	Hearing aid	28,366	1.03
<b>Total</b>		<b>1,802,010</b>	<b>65.19</b>

# Year 2009 Export and Import Top 20 Items

(Unit : thousand US dollars, %)

Ranking	Export			Import		
	Product	Export amount	Ratio	Product	Import amount	Ratio
1	Ultrasound imaging system	226,280	19.01	Stent	92,970	4.95
2	Heating pad system, home use	99,264	8.34	Knee artificial joint	66,934	3.56
3	Ophthalmic Spectacle Lenses	74,162	6.23	Soft contact lenses	60,148	3.20
4	Blood glucose test strip	50,643	4.26	Computed tomography X-ray system	55,003	2.93
5	Medical probes	50,178	4.22	Dialyzers for hemodialysis	47,245	2.51
6	Soft contact Lenses	47,516	3.99	MRI system	44,622	2.37
7	Dental Implant	35,783	3.01	Accelerator system collimator electron applicator	42,147	2.24
8	Combinational stimulator for medical use	33,312	2.80	Ophthalmic Spectacle Lenses	41,455	2.21
9	Computed tomography X-ray system	32,016	2.69	Skin Staple	35,791	1.90
10	Digital X-ray imaging system	31,973	2.69	Utensil for operation	31,900	1.70



# Year 2009 Export and Import Top 20 Items

(Unit : thousand US dollars, %)

Ranking	Export			Import		
	Product	Export amount	Ratio	Product	Import amount	Ratio
11	Surgical Laser	28,066	2.36	Ultrasound imaging system	31,125	1.66
12	Image processing system	26,367	2.22	Hip prosthesis	29,971	1.59
13	Syringe	25,973	2.18	Dental Implant	29,712	1.58
14	Medical Handpiece	21,380	1.80	PET system	29,035	1.54
15	Graft	20,837	1.75	Spinal internal fixation system	27,761	1.48
16	Ophthalmic refractometer	19,081	1.60	Intraocular lens	27,439	1.46
17	Stent	18,219	1.53	Medical Probe	25,431	1.35
18	Condom	15,024	1.26	Trocar	23,944	1.27
19	Patient monitor	13,054	1.10	Dressing	22,955	1.22
20	Spinal internal fixation system	12,486	1.05	Angiography X-ray system	20,878	1.11
Total		881,617	74.08		786,467	41.85

# Year 2009, Importing top 20 companies



(Unit : thousand US dollars, %)

Ranking	Company	Amount of imports	Ration
1	Johnson & Johnson Medical	116,859	6.22
2	SIEMENS	94,384	5.02
3	Medtronic Korea	76,502	4.07
4	Tyco Healthcare Korea	74,719	3.98
5	Philips Electronics	68,768	3.66
6	GE Healthcare Korea(Seoul)	58,000	3.09
7	Stryker Korea	49,316	2.62
8	Johnson & Johnson	49,180	2.62
9	Boston Scientific Korea	41,758	2.22
10	Fresenius Medical Care Korea	32,455	1.73

# Year 2009, Importing top 20 companies



(Unit : thousand US dollars, %)

Ranking	Company	Amount of imports	Ration
11	Shinhung	32,376	1.72
12	Abbott Korea	29,015	1.54
13	Roche Diagnostics Korea	28,045	1.49
14	Gambro Korea	27,506	1.46
15	Synex	27,458	1.46
16	Zimmer Korea	22,582	1.20
17	HDX	21,446	1.14
18	B. Braun Korea	20,778	1.11
19	BD Korea	19,749	1.05
20	Olympus Korea	18,644	0.99
<b>Total</b>		<b>909,537</b>	<b>48.40</b>

# Supporting for domestic development of Drug Eluting Stent

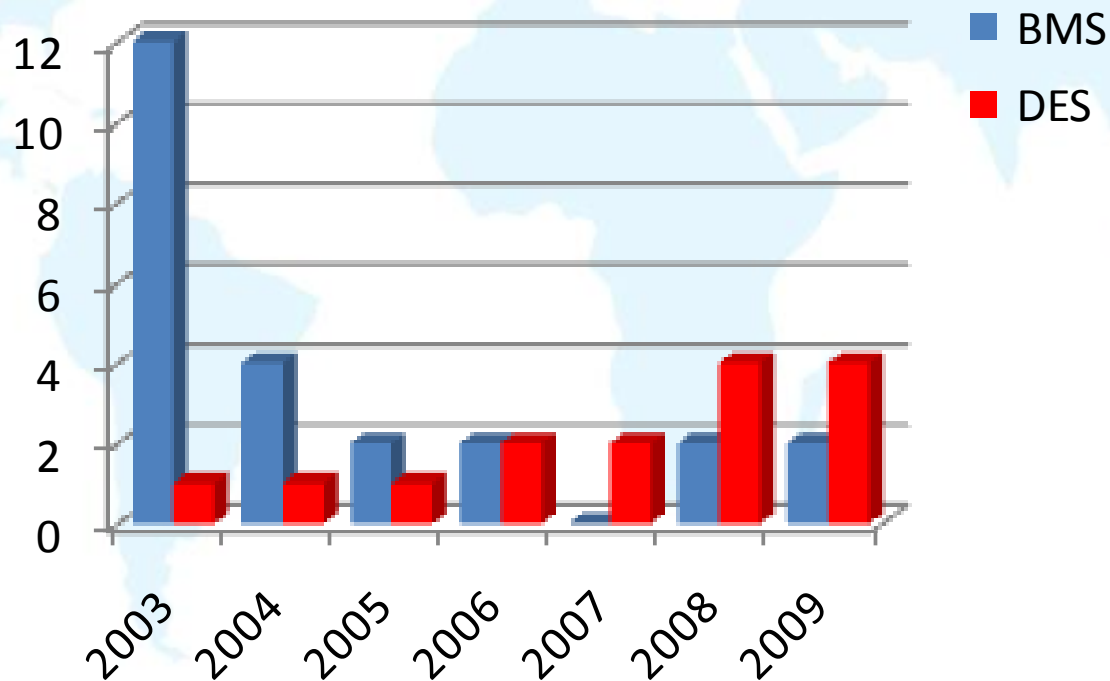
- It appears that among the cardiovascular stents, drug eluting stent's demands are increased consistently.
- According to such a trend, the number of drug eluting stent which was only one in 2003 increased by four in 2009. On the other hand, the number of drug-uncoated cardiovascular stents was 12 in 2003, but decreased by 2 in 2009.
- The reason is estimated that the demands for drug eluting stent which can improve the restenosis problem after surgery are increasing consistently.

# Supporting for domestic development of drug eluting stent

- According to statistics for medical devices import record in 2009, among imported items, stents (93 million dollars) ranked number one. Artificial knee joint (67 million dollars) and soft contact lenses (60 million dollars) were followed the next.
- About the import sum of stents, cardiovascular stents are occupied mostly (63%). Among them, drug eluting stent (DES) accounted for 50% of the total imports.
- But in domestic market, most of cardiovascular stents are the imported products (63 of 64 of approved items) and there is no domestic product in drug eluting stent (DES).
- For this reason, FDA provides administrative and procedural support to domestic manufacturers who are participating in the research and development of drug eluting stent (DES) by assigning the exclusively responsible person for approval.

# License of Cardiovascular Stent

## License of Drug Eluting Stent (DES) and Bare Metal Stent(BMS)



# License of Cardiovascular Stent

## Product Manufacture License of Cardiovascular Stent

(Unit: Cases)

Manufacture		Import		Total
BMS	DES	BMS	DES	
1	0	46	17	64

# Imports of medical devices

(Unit : million US dollars)

Ranking	2007	2008	2009
1	Stent (About 109)	Stent (About 115)	Stent (About 93)
2	MRI (About 77)	CT (About 78)	Knee artificial joint (About 67)
3	CT (About 70)	MRI (About 74)	Soft contact lenses (About 60)
4	Dialyzers for hemodialysis (About 56)	Soft contact lenses (About 61)	CT (About 55)
5	Knee artificial joint (About 56)	Knee artificial joint (About 61)	Dialyzers for hemodialysis (About 47)



# Licensed DES

Manufacturer (Country)	Drug Type	Product Name
Cordis(Netherlands)	Sirolimus	CYPHER
Abbott(Ireland)	Everolimus	Xience V, Xience Prime
Boston Scientific (USA, Ireland)	Paclitaxel	TAXUS Express, TAXUX Liberte
	Everolimus	Promus Element
Medtronic(Ireland)	Zotarolimus	Endeavor
B Braun(Germany)	Paclitaxel	Coroflex Please
Biosensors(Singapore)	Biolimus A9	BioMatrix
Terumo(Belgium)	Biolimus A9	Nobori
OrbusNeich(Netherlands)	Murine anti-human CD34 mAb	Genous Bio-Engineered R Stent
AMG(Rumania)	Paclitaxel	Pico Elite

A light blue world map is centered in the background of the slide. The map shows the outlines of the continents in a darker shade of blue against a white background. The text 'Thank you.' is overlaid on the map.

**Thank you.**

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