

Healthy City Profile

Jeonju, Republic of Korea

2006. 10





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Jeonju City Health Profile

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Declaration of Healthy city Jeonju

In order to be reborn as a major city in the state-of-art technology industry, Jeonju has pursued community development which aims to achieve harmony between human beings and nature. Inherited with rich cultural traditions, we have had efforts to bring a healthy life to local residents by preserving ecosystem and improving the physical environment.

Life in \lceil New Millennium $_{\perp}$ suggests that we have a right to lead a happy life, that all are protected from diseases and have a chance to lead a healthy life. In this sense, health is an important factor that influences perceptions in quality of life. For this, it is advised that active participation from the public as well as individuals' efforts in their own health management be hand in hand for improvements.

Now we declare the basic directions to [¬]Healthy City Jeonju_→ with the will of our inhabitants toward a clean and well-being city.

- 1. We will propel the policy for public health improvement and the economic development.
- 1. We will build a well-being community which is safe and fair in health provision.
- 1. We aim at a livable city that is full of sharing among residents and in which people live well and take care of each other.
- 1. Our community capacity will be concentrated on building a living city with traditions.
- 1. We will draw sustainable development of our city toward a clean and fresh environment.

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Future Vision and Goals



Jeonju's Health Profile

Chapter 1. History and Geography of Jeonju

1. History

• Age of Three Hans - 3rd century: belonged to Mahan

• Age of Three Kingdoms

- AD 685 (5th year of King Sinmun) : Named Wansanju
- AD 757 (16th year of King Gyeongdeok) : Renamed Jeonju
- AD 892 (6th year of King Jinseong) : Declared the capital of Post Baekje

• Koryo Dynasty

- AD 936 : Post Baekje fell
- AD 983 (2nd year of King Seongjong) : Establishment of Jeonjumok
- AD 1005 (8th year of King Mokjong) : Appointment of Jeonju Jeoldosa
- Joseon Dynasty
 - -1392 (1st year of King Taejo) : Named Wansan Yusubu
 - -1403 (3rd year of King Taejong) : Named Jeonjub
 - -1728 (4th year of King Yeongjo) : Appointed Jeolla Gwanchalsa
 - -1896 (33rd year of King Gojong) : Declared the county Town of Jeollabukdo
- Modem Age
 - -1914 : Establishment of Jeonju-myeon
 - -1931 : Jeonju-myeon raised to Jeonju-eup
 - -1935 : Jeonju-eup raised to Jeonju-bu / Wanju County separated
 - -1949 : Renamed Jeonju City
 - -1989 : Establishment of Wansan-gu and Deokjin-gu

2. Geography

A city town of Jeollabukdo, located at 35° 53' north and 127° 14' east, Jeonju City is surrounded in all directions by the seven peaks of the Noryeong ranges, including Girinbong Peak, Mt. Godeok, Mt. Namgo, Mt. Moak, and Wansan. Built on the alluvial soil of the Jeonju River, most of downtown Jeonju is generally even and gently-slopes in a northwesterly direction.

Jeonju River originates from the watershed bordering the Gwanchon plain, 26km southeast of downtown Jeonju, and penetrates the heart of the city from the southeast. The Samcheon River, originating from the borderline between Imsil County Unam-myeon and Wanju County Gui-myeon, cuts through farmlands in the west of Jeonju from south to north, eventually joining Mangyeong River. Soyang River, originating from Gomchi, passes through the northeastern border of the city to join the Jeonju River.

Home to 622,472 residents in 192,960 households, Jeonju city is 206.24km² wide, with a yearly average temperature of 12.9°C, and an annual rainfall of 1296.2mm.



Chapter 2. Symbol and Mascot of Jeonju

1. Symbol

"Jeonju, a city with the dynamic energy of future hopes"

The figure of an unfolding Hapjukseon (traditional folding fan) is Jeonju's logo and symbolizes the image of Jeonju as the center of regional history, culture, art, and tourism that is also moving headlong into the future. Each component symbolizes Jeonju's three



distinct features: a traditional and historical city, a green city with a well-preserved natural environment and a city of ultramodern architecture and design. The dynamic image of a Hapjukseon represents Jeonju as a city with a creative culture, where tradition and the future breathe together.

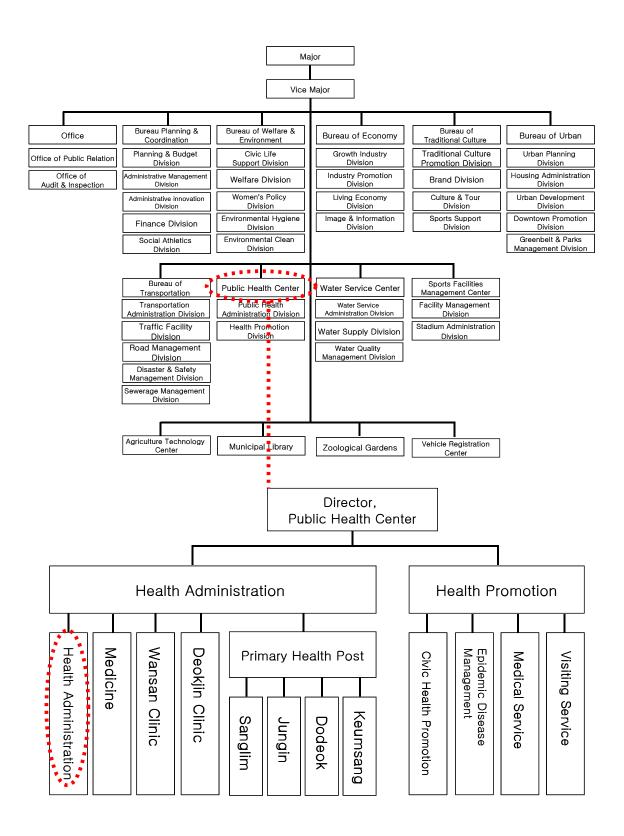
2. Mascot

'Traditional culture (Taegeukseon and Hapjukseon - traditional folding fan)''

Jeonju's unique traditional fans, Taeguekseon and Hapjukseon, are personified as familiar and friendly characters to take the role as guides to tell people the story of Jeonju, and as guardians to hand Jeonju's history over to our descendants. They



symbolize the city's dreams, hopes, strength vitality character, and confidence for the future.



Chapter 3. Administrative Structure of Jeonju City

<Healthy City Jeonju Team in Public Health Center>

Chapter 4. Demographic characteristics of Jeonju

The population size of Jeonju is 622,472 in 2004. The population size of Jeonju decrease annually and now it is an aged society. Since 1975, the number of older population have increased from 311,432 to 622,472 in 2004. However, the rate of increase in population have unfortunately decreased from 21.2 in 1990 to 0.25 in 2004(Table 1, Table 2, Figure 1).

unit : person age Total 0-9 10-19 20-29 30-39 40-49 50-59 60-64 65+ sex 622,472 83,770 97,880 100,143 108,940 101,890 60,730 22,469 46,650 total 53,529 29,855 10,677 307,510 43,556 50,629 51,307 50,126 17,801 men 314,962 40214 30,875 11,792 women 47251 48,836 55,381 51,764 28,849 % 9.8 100 13.5 15.7 16.1 17.5 16.4 3.6 7.5

Table 1. Population structure by age and gender, 2004

Data Sources : Jeonju statistical yearbook, 2005

	unit : person							
		population number		the rate of increase				
year	total	male	female	in population (%)				
2004	622,472	307,510	314,962	0.25				
2000	622,238	307,436	314,802	9.1				
1995	570,570	281,822	288,748	10.4				
1990	517,104	256,735	260,369	21.2				
1985	426,498	213,120	213,378	16.2				
1980	366,997	184,198	182,799	17.8				
1975	311,432	156,663	154,769	18.5				

Table 2. Trends of population size, 1975-2004

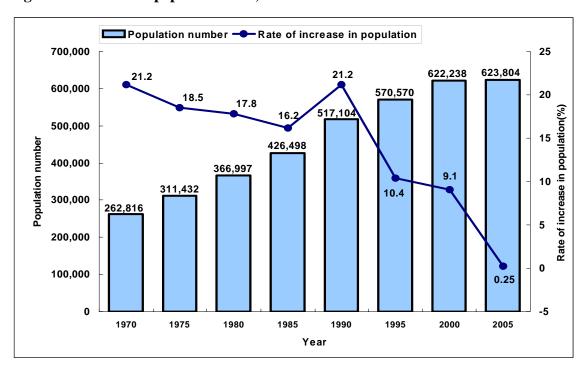


Figure 1. Trends of population size, 1975-2004

Data of the population census taken in 2005 indicates that the population in Jeonju City is influenced by a progressive ageing trend since people older than 65 already account for 7.82% of the population. In the Republic of Korea, the ratio of people older than 65 is 8.0% (Korean Statistical Office, 2000). These findings indicate that the ratio of older people in Jeonju City is similar to that of the whole territory of the Republic of Korea(Table 3).

	1				unit : percent
year	1975	1985	1995	2000	2005
elderly people (%)	2.87	4.12	5.08	6.19	7.82
aged-child ratio (%)	7.9	11.4	19.9	27.3	36.3

Table 3. Trends of elderly people number, 1975-2004

Data Sources : Jeonju statistical yearbook, 2005

In 2004, 13,838 children were born while 2,697 people died in Jeonju City, compared to the national average of crude birth rate, which was 9.8 for year 2004(Korean Statistical Office, 2005), the vital index in Jeonju City was 9.8. However, crude birth rate in Jeonju city have unfortunately decreased from 12.4 in 2001 to 9.8 in 2004(Table 4).

unit : percent							
	crud	e birth rates	cruc	le birth rates			
year	Jeonju	Republic of Korea	Jeonju	Republic of Korea			
2004	9.8	9.8	4.3	5.1			
2001	12.4	11.6	4.3	5.1			

Table 4. Crude birth and death rates per 1,000 people

Data Sources : Jeonju statistical yearbook, 2005

In 2004, twenty hundreds seventy infants were born less than 2500g in Jeonju city. The national average rate of underweight new borns was 4.8% in 2004 (Korean Statistical Office, 2005) while the vital index for Jeonju City indicates 4.4% of average rate (Table 5).

Table 5. Number of neonate, less than 2500g

Noon	Jeor	ıju	Republic of Korea		
year	person	%	person	%	
2004	270	4.4	22,911	4.8	
2003	270	4.2	21,527	4.9	
2002	291	4.4	20,874	4.2	
2001	304	3.9	23,500	4.2	

Data Sources : http://chc.mohw.go.kr/

Chapter 5. General Health Status

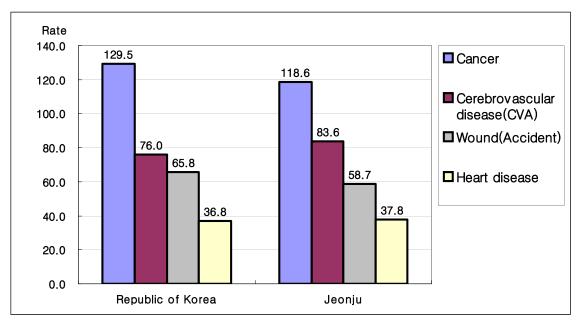
1. Cause of death

The leading causes for the death of Jeonju residents share similar ranks and patterns with the statistics for the entire country. But most rates of leading causes of deaths, except CVA, are much lower than the corresponding national rates because age structure plays a significant role in the differences of the rates(Table 6)(Figure 2).

Table 6. Leading causes of death

rank	1	2	3	4
Dopublic of	cancer	cerebrovascular	wound	heart disease
Republic of	Cancer	disease (CVA)	(accident)	neart uisease
Korea	129.5 ¹⁾	76.0	65.8	36.8
	00 0 00 0	cerebrovascular	wound	heart disease
Jeonju	cancer	disease (CVA)	(accident)	neart disease
	118.6	83.6	58.7	37.8

Figure 2. Leading causes of death.



Source : Korea National Statistical Office, Annual Report on the Cause of Death Statistics, 2004 (Raw Data) 1) Rate is per 100,000 populations

According to the age-adjusted mortality rate, most of all mortality rate in Jeonju city were lower than that of whole nation(Figure 3).

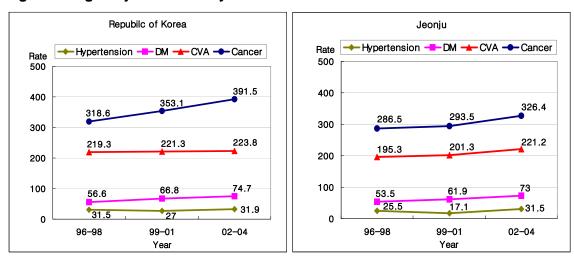


Figure 3. Age adjusted mortality rate.

Source : Korea National Statistical Office, Annual Report on the Cause of Death Statistics, 2004 (Raw Data) 1) Rate is per 100,000 populations

2. Measure of morbidity

Based on the results from a survey on health status, the prevalence of diseases experienced by respondents last year, over a period of three months, were as follows: hypertension, 19.1%, followed by arthritis, dental disease, back pain and diabetes(Table 7).

Table 7. Morbidity (self-reported) experienced during past one year

Rank	1	2	3	4	5
disease	hypertension	arthritis	dental disease	back pain	diabetes
%	10.1	7.8	6.2	5.9	4.7

3. Subjective health status

A Community Survey of Jeonju City, showed 20.1% as perceiving their health status to be 'very good'. 42.8% responded with 'good', while 27.7%, gave a 'neutral' answer. More than 62.9% of the total respondents perceived their health status to be 'Good'(Table 8).

	men	women	total
ery good	185(24.1)	169(17.1)	354(20.1)
good	337(43.8)	414(41.9)	751(42.7)
neutral	187(24.3)	300(30.4)	487(27.7)
bad	47(6.1)	77(7.8)	124(7.1)
very bad	13(1.7)	28(2.8)	41(2.3)
total	769(100)	988(100)	1757(100)

Table 8. Subjective health status by gender

Chapter 6. Health behaviors

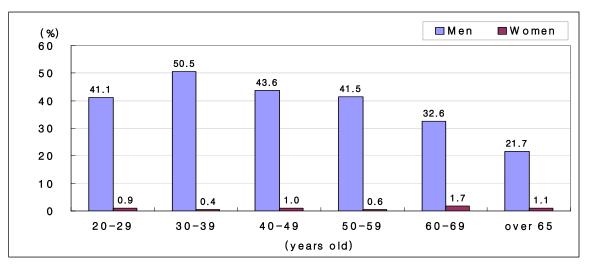
1. Smoking rates

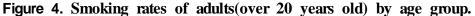
Cigarette smoking is the single most preventable cause of disease and death in Korea. In 2006, 18.8% of adolescents were current smokers in Jeonju. Current smokers were 42.0% of men, compared to 0.8% of women(Table 9). This Survey shows that the smoking rate is 50.5% of men in the 30 to 39 year old age group. It was found that younger respondents' smoking rate is higher than older respondents'(Figure 4). Tobacco use prevention and control program should be enhanced to promote tobacco-free living and to reduce morbidity and mortality from tobacco use and exposure to second-hand smoke.

Table	9.	Smoking	rates	of	adults(ov	ver 20	vears	old)	bv	gender
				~-		- •		<u> </u>	~./	B

unit : person(%) total men women 323(42.0) current smoker 8(0.8) 331(18.8) ex-smoker **90(11.7)** 1(0.1) 91(5.2) non smoker 356(46.3) 979(99.1) 1335(76.0) total 769(100) 988(100) 1757(100)

Source : Survey on Health Status Jeonju. 2006





2. Drinking rates

According to the health behavior survey in 2006, 48.7% of Jeonju residents are current drinkers. More men(68.3%) than women (33.4%) were current drinkers (Table 10). This Survey shows that the drinking rate is 80.0% for men aged 20 to 29. It was found that younger respondents' drinking rate is higher than that of older respondents'(Figure 5).

Table 10. Drinking rates by gender

	in to. Drinking facts by gener							
	men	women	total					
current drinker	252(68.3)	330(33.4)	855(48.7)					
former drinker	38(4.9)	17(1.7)	55(3.1)					
non drinker	206(26.8)	641(64.9)	847(48.2)					
total	769(100)	988(100)	1757(100)					

Source : Survey on Health Status Jeonju. 2006

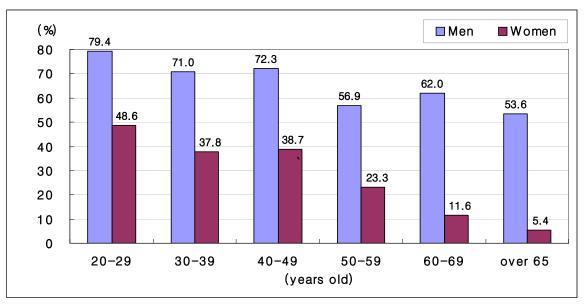


Figure 5. Smoking rates of adults(over 20 years old) by age group.

3. Physical exercise

Survey on health behaviors of Jeonju residents(2006) show that 26.5% of residents were reported to exercise 3-7 times per week. However, 73.5% of the population do not exercised at all. The result indicated that 74.8% of female has not exercised at all while 71.9% of male has not exercised(Table 11).

Table 11.	Physical	exercise	by	gender	
-----------	----------	----------	----	--------	--

	cise by gender		unit : person(%)
	men	women	total
not at all	553(71.9)	739(74.8)	1292(73.5)
3-7 times a week	216(28.1)	249(25.2)	465(26.5)
total	769(100)	988(100)	1757(100)

Source : Survey on Health Status Jeonju. 2006

4. Weight control

Obesity rate in men was 22.9%, and 14.6% for women(Table 12).

Table	12.	Obesity	rate	by	gender
-------	-----	---------	------	----	--------

Table 12. Obesity fate	by gender		unit : person(%)
	men	women	total
low weight	24(3.3)	123(13.1)	147(8.8)
normal weight	541(73.8)	679(72.3)	1220(72.9)
obesity	168(22.9)	138(14.6)	306(18.3)
Total	733(100)	940(100)	1673(100)

5. Health behavior of Jeonju and whole nation

Compared to the national average, Jeonju citizen's health behavior (i.e. smoking, alcohol drinking, physical activity and obesity) were found to be above average. This implies that Jeonju citizen have healthier life style(Figure 6).

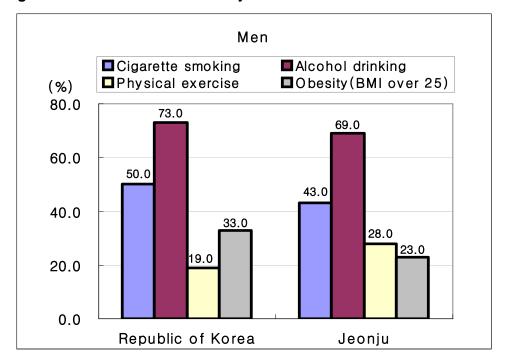
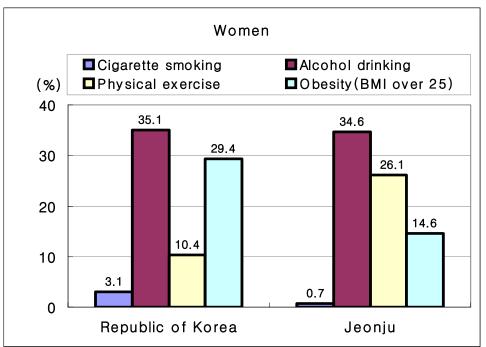


Figure 6. Health behavior of Jeonju and whole nation.



Chapter 7. Public health policies and services

1. Health securities

All Koreans are covered by National Health Insurance or Health Aids since 1989. In 2005, 94.3% of residents of Jeonju city were insured by National Health Insurance, while 5.7% of the residents, mostly poor, were enrolled in Health Aids. Among insured residents, 48.5% were self-employed(Table 13).

		unit : person(%				
Tune of health geowity	year					
Type of health security	2005	2004				
Total	511,072 (100.0)	519,139 (100.0)				
self-employers	234,047 (45.8)	254,370 (49.0)				
employees	173,528 (33.9)	165,275 (31.8)				
teachers and government officers	74,674 (14.6)	76,554 (14.8)				
health aids	28,823 (5.7)	22,940 (4.4)				

Table 13. Health security status

Data Sources : National Health Insurance report Jeonju City, 2005

2. Health Services

Public Sectors

Jeonju city has one public health center, 1 public health clinic center and 4 primary health care posts.

Private Sectors

Many medical services are provided by private owned health services facilities in Jeonju, similar to other areas in Korea. Primary care is primarily provided by 399 clinics. Secondary care is provided by two hospitals.

In 2003, there were 327 licensed acute care beds. There were 84 physicians included dentists and oriental medicine doctors(Table 14).

classification		No. of do						No. of
	number	number No. of beds	total	doctor	dentist	oriental medicine doctor	No. of nurses	pharmaci sts
clinics	399	1,801	495	494	1		167	-
hospital	20	2,013	100	100			317	19
general hospital	4	2,072	676	605	71		956	30
dental clinics	174	4	203	-	203		6	-
oriental clinics	140	230	198	-		198	58	-
pharmacy	307	-	-	-			-	450

Table 14. Health service facilities

Data Sources : Jeonju statistical year book, 2005

3. Vaccination

Vaccination services are primarily provided by public health facilities such as public health center. vaccination services provided by public health facilities are shown in Table 15. Overall, vaccine preventable diseases are reported at record low level in Korea, because of high vaccination levels in children.

Table 15. Immunization services by public health facilities

Table 15. Immunization services by public hearth facilities unit : pers										
Year	DTP	Polio	MMR	Influenza	Japanese Encephalitis	Typhoid	Hepatitis B	B.C.G		
2005	13,456 (16.6)	8,837 (10.9)	7,823 (9.7)	30,609 (37.8)	10,258 (12.7)	135 (0.2)	8,174 (10.1)	1,728 (2.1)		

4. Health education services

Health education services primarily provided by public health facilities have strengthened recently through health promotion of residents. Health education services provided by public health facilities are shown in Table 16. Health educations are focused on prevention of smoking, drinking and unhealthy diet habits. Anti-smoking policies are broadly conducted on all residents. This polices include broadening of smoking free districts, health education for students, and campaign for abstaining smoking and alcohol drinking.

				public lie			unit : person(%)		
			groups education						
year	total	total preschool children	students	employees	aged	others	education		
2005	64,139	4,703	19,342	1,429	9,590	5,488	23,587		
2005	(100.0)	(7.3)	(30.1)	(2.2)	(15.0)	(8.6)	(36.8)		

Table 16. Health education services by public health facilities

Chapter 8. Physical environments

1. Air quality

The level of SO₂, CO, NO₂, O₃ and dust in 2004 decreased from recorded levels from 1998, and the level of SO₂, CO, NO₂, O₃ and dust in Jeonju city were much lower than the national average(Table 17).

	year	SO ₂ (ppm)	NO ₂ (ppm)	$O_3(ppm)$	CO(ppm)	PM10(<i>µ</i> g/mª)	Pb(<i>µ</i> g/ m²)
	Jeonju	0.004	0.018	0.015	0.7	49	-
2004	Republic of Korea	0.006	0.024	0.022	0.7	58	0.0732
	Jeonju	0.005	0.027	0.019	0.8	44	-
2001	Republic of Korea	0.007	0.025	0.021	0.8	58	0.0669
	Jeonju	0.009	0.016	0.020	1.1	60	-
1998	Republic of Korea	0.009	0.020	0.020	1.0	55	0.0959

Table 17. Annual average levels of air quality

Data Sources : Jeonju statistical year book, 2005

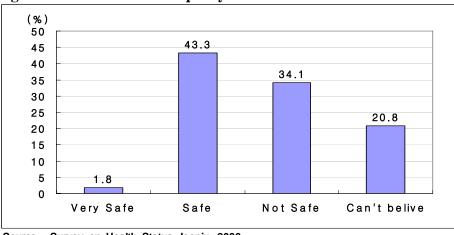
2. Water quality

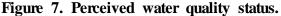
The drinking water supply network in Jeonju city covered 96.0% of the city area in 2004(Table 18).

Table 18. Distribution	rate	of	water	supply
------------------------	------	----	-------	--------

year	2001	2002	2003	2004
distribution rate (%)	96.0	95.9	94.9	94.5

A Community Survey of Jeonju City showed that only 1.0% of the residents perceive Jeonju's water quality 'very safe'. 43.3% responded 'safe', while 20.8% said 'can't believe'. More than 54.9% of the total respondents perceived water quality status to be 'not safe'(Figure 7).





Source : Survey on Health Status Jeonju. 2006

3. Solid waste management

In 2005 it was estimated that 544 tons per day of solid waste was generated. The proportion of disposing waste by landfills and recycling is the most common practice in Korea. The proportion of disposing waste by landfill decreased from 360 tons in 2001 to 178 tons in 2005. On the other hand, recycling increased from 231 tons in 2001 to 366.4 tons in 2005(Table 19).

Table	19.	Disposal	of	solid	waste

year	total	collection (ton/day)	
	(ton/day)	landfill	recycling
2005	544.4	178.0	366.4
2004	573.7	239.2	334.5
2003	587.7	293.5	294.2
2002	577.1	307.1	270.0
2001	591.0	360.0	231.0

Chapter 9. Physical infrastructure

1. Housing

House provision rate has increased annually up to 80% in 2000. Major type of housing is detached dwelling, followed by apartment(Table 20).

year	housing	house type			
	rate	detached dwelling	APT	row -houses	APT unit in a private house
2004	88.81	58,753	115,011	3,414	4,679
2000	83.32	34,845	100,681	4,623	585
1995	73.49	44,334	58,462	4,436	461
1990	-	46,687	23,607	3,637	225
1985	-	39,543	9,793	3,190	-

Table 20. House rate and type

Data Sources : Jeonju statistical year book, 2005

2. Transportation systems

The total number of automobiles registered was about 201,283 in 2005 which has increased from 169,233 in 2001(Figure 8).

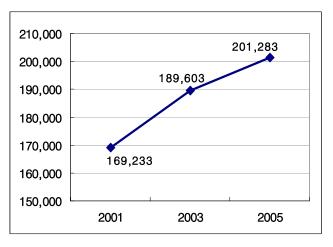


Figure 8. Number of motor vehicles, 2001-2005.

Data Sources : Jeonju statistical year book, 2005

3. Traffic accidents

Traffic accidents in Jeonju decrease annually(Table 21). Crude death rate of Jeonju city, due to traffic accidents per 10,000 people, was lower than that of the national average(Table 22).

year	traffic accidents		
	case	death(person)	injury (person)
2005	3,540	87	5,761
2004	3,339	67	5,365
2003	4,736	104	6,360
2002	4,528	110	6,434

Table 21. Traffic accidents status in Jeonju city

Data Sources : Jeonju statistical year book, 2005

Table 22. Crude death rates due to traffic accidents per 10,000 people

	Jeonju	Jeonbuk	Republic of Korea
death rates due to traffic accidents	1.07	2.51	1.34

Data Sources : Jeonju statistical yearbook, 2005

4. Roads

Roads are part of the basic infrastructure of modern society and thus part and parcel of a citizen's live. Roads are related to health in more than one way. Therefore, management of roads should be done bearing the concerns of the citizen's health in mind. Statistics of Jeonju City in 2004 show the following about paved and non-paved roads: total area: 386,761 m² paved roads' 388,361 m². The rate of paved to total area being 99.9%. This did not greatly change when compared to statistics in 1999. The total area of roads in 1999 represented 384,200 m². Paved roads then covered area of 381,216 m², reflecting a rate of 99.2%(Table 23).

year	roads(m²)	paved(m ²)	rate of pave(%)
1999	384,200	381,216	99.2
2001	385,650	383,800	99.9
2004	388,761	388,361	99.9

Table 23. Rate of pave in Jeonju

Priority Health Problems of Jeonju

< Based on Jeonju's health profile >

1. Increasing aged population

Data of the population census taken in 2005 indicates that the population in Jeonju City is influenced by a progressive ageing trend since people older than 65 already account for 7.82% of the population. And the rate of increase in population have unfortunately decreased from 21.2 in 1990 to 0.25 in 2004.

2. Morbidity and mortality

The prevalence of diseases experienced by respondents last year, over a period of three months, were as follows: hypertension, 19.1%, followed by arthritis, dental disease, back pain and diabetes. According to the age-adjusted mortality rate, most of all mortality rate in Jeonju city were lower than that of national average.

3. Subjective health status and health behaviors

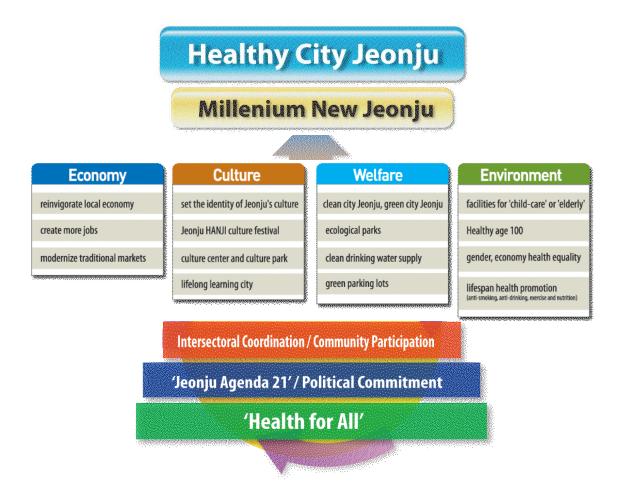
More than 62.9% of the total respondents perceived their health quality to be 'Good'. Compared to the national average, Jeonju citizen's health behavior(i.e. smoking, alcohol drinking, physical activity and obesity) were indicated as better.

4. Social physical infrastructure

The total number of automobiles registered was about 201,283 in 2005 which has increased from 169,233 in 2001. But, traffic accidents decrease annually. And crude death rate of Jeonju city, due to traffic accidents per 10,000 people, was lower than that of national average.

Toward Healthy City Jeonju

1. Health City Jeonju Programs & Approach



- ♦ Healthy City Jeonju Approach
- Health Advocacy
- Intersectoral Coordination
- Community Participation
- Setting Approach
- Political Commitment
- Intra- and International network
- Activity as a member of AFHC

2. Life Style Modification Programs(2004-2006)

1. 2006 Jeonju Health Festival

- Preventing disease and improving health of citizens
- more than 4,000 persons per festival
- Accompanying various events

2. Physical activity and preventing obesity programs

- Contest for reducing waist circumference
 - Preventing obesity and improving healthiness in adults
 - from 2004 to now, 3-4 times per year
 - more than 800 persons per contest
 - Accompanying health education
- ◆ Center for reducing waist circumference
 - Preventing obesity and improving physical fitness in adults
 - from 2003 to now, more than 200 times per year
 - more than 3,000 persons per year
 - Accompanying health education

Walking festival

- Preventing obesity and improving physical fitness in adults
- from 2003 to now, 2 times per year
- more than 4,000 persons per year

3. Anti-smoking programs

- Anti-smoking education in elementary schools and kindergartens
 - 10 times per year, more than 900 persons per year
 - Health effects from smoking by experiment and VTR
- Smoking cessation program for workers
 - 4 times per year, about 200 persons per year
 - Health effects from smoking by experiment and VTR
 - Providing Nicotine patch

4. Nutrition Programs

- ◆ Nutrition Program for Diabetes Patients
 - Dietary consulting, Food classroom for diabetes patients, etc
- ◆ Education about Nutrition for Preschool Children
 - 12 times per year, more than 200 persons per year
- ◆ Health Food Exhibition
 - about 10 times per year
 - Accompanying health education, leaflets, health examination, etc

5. Others

- Center for health promotion
 - Providing health information
- Dental health promotion program
 - Providing dental health information
- Mental health promotion program
 - Providing information about mental health and stress