



# Budget Impact Analysis of NIPT Coverage in Korea: Focusing on Older Pregnant Women

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## BACKGROUND

- Prenatal diagnosis is essential in obstetrics for detecting fetal abnormalities, including Down syndrome and neural tube defects. It comprises prenatal screening tests, invasive tests (e.g., Chorionic Villus Sampling, Amniocentesis), and Non-Invasive Prenatal Testing (NIPT), which screens fetal DNA with minimal risk.
- In Korea, high-risk pregnancies, especially among women over 35, are increasing, raising demand for NIPT. However, high costs remain a barrier, and no studies have assessed the cost-effectiveness or budget impact (BI) of NIPT in Korea.

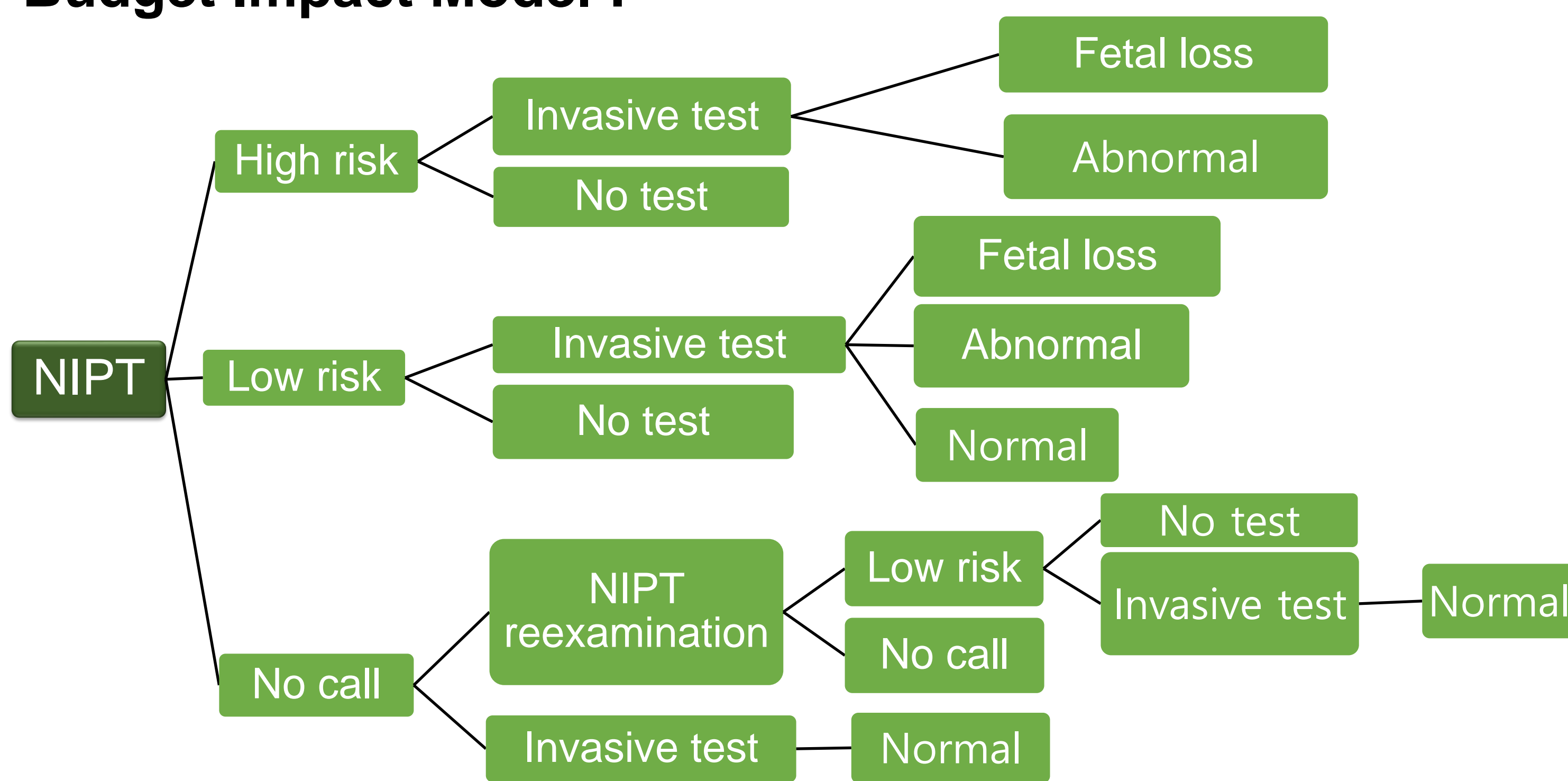
## OBJECTIVE

- Evaluated the budget impact of introducing NIPT into Korea's national health insurance.
- Provided economic evidence using real-world data to support reimbursement decisions and inform policy.

## METHODS

**Data source :** Total number of pregnant women derived from 2017 birth statistics (n=358,000).

**Budget Impact Model :**



**NIPT Costs Price range :** 357,000 KRW (258.02 USD) to 715,000 KRW (516.76 USD) (2018 survey)

**Insurer's Financial Burden with NIPT Reimbursement =**  
 Total number of pregnant women × NIPT reimbursement rate  
 × NIPT price upon reimbursement × (1 - co-payment rate)

**Budget impact scenarios :**

payer coverage of 70%	NIPT price	
	Lower price limit (\$258.02)	Upper price limit (\$516.76)
older pregnant women & younger pregnant women with high-risk group from maternal serum screening	Scenario 1	Scenario 2
older pregnant women with high-risk group from maternal serum screening	Scenario 3	Scenario 4

## METHODS

payer coverage of 30%	NIPT price	
	Lower price limit (\$258.02)	Upper price limit (\$516.76)
older pregnant women & younger pregnant women with high-risk group from maternal serum screening	Scenario 5	Scenario 6
older pregnant women with high-risk group from maternal serum screening	Scenario 7	Scenario 8

## RESULTS

payer coverage of 70%				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Total number of pregnant women (N)	351,019	351,019	351,019	351,019
Reimbursement Rate (%)	32.0	32.0	4.9	4.9
NIPT Price (\$)	258.02	516.76	258.02	516.76
Increase in Annual Medical Costs (\$)	28,993,080	58,067,390	4,420,122	8,852,626
Annual Insurer Financial Burden (\$)	20,295,157	40,647,164	3,094,085	3,094,085

payer coverage of 30%				
	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Total number of pregnant women (N)	351,019	351,019	351,019	351,019
Reimbursement Rate (%)	32.0	32.0	4.9	4.9
NIPT Price (\$)	258.02	516.76	258.02	516.76
Increase in Annual Medical Costs (\$)	28,993,080	58,067,390	4,420,122	8,852,626
Annual Insurer Financial Burden (\$)	8,697,925	17,420,220	1,326,037	2,655,788

## CONCLUSION

- The analysis evaluates the budget impact of introducing NIPT to the Korean National Health Insurance (KNHI), offering essential data on insurer costs. With limited research on the cost-effectiveness of prenatal diagnostics in Korea, these findings provide critical economic evidence to establish reimbursement criteria, address research gaps, and support evidence-based policies for high-risk groups.
- With a 28.76 billion USD childbirth support budget in 2024, South Korea offers vouchers like a 434 USD maternity aid per pregnant woman. Allocating these funds within national health insurance could support the feasibility of coverage scenarios, including Scenario 2, which presents the highest financial burden.