Taipei Institute of Pathology
Optional Neonatal Screening Programs Informed Consent Form

Dear Parents,

To detect, diagnose and intervene potential metabolic disorders early and to minimize the damages to your baby’s physical and intelligent status caused by these disorders, the Health Promotion Administration currently specifies a neonatal screening program for 11 specific genetic disorders. The complete diagnosis and treatment process has been established, and part of the laboratory expenses (NTD$200) will be covered by the Health and Welfare Surcharge of Tobacco Products. For details, please refer to the “Screening of Neo-natal congenital metabolic dysfunction diseases” in the “Children’s Health Booklet.”

Moreover, the screening center provides other optional screening items at your own expenses. We hereby invite you to participate and request for your consent to accept the following tests for your babies. For the detailed introductions about the disorders and the instructions of the tests, please refer to the education flyer.

These tests will not only increase the blood sample collection volume of your baby, but also help you discover the proper treatment if necessary. Through neonatal screening, early detection, early diagnosis and early intervention, the potential damages to the infants caused by these disorders could be minimized. The test results will be helpful as reference information for your future child-bearing and genetic counseling. The Ministry of Health and Welfare may decide whether or not to include these screening items as routine examinations in the future based on the test results.

Because the number of screening items have increased, the frequency of your baby’s return for follow-ups has also increased. For highly suspicious cases, we will make definitive diagnoses and record them in the medical records in accordance with the regulations for the neonatal screening program – referral system. In this case, your baby’s rights to take private insurance may be influenced. However, without your permission, your baby’s samples collected during neonatal screening program will not be used for other purposes.

I. Tandem Mass Spectrometer (TM) Screening for other diseases (free screening):
Part of the genetic amino acid, organic acid and fatty acid metabolic disorders (for details, please refer to the education flyer) could be detected simultaneously with the specified items using the tandem mass spectrometer (TMS). Although part of the items still lack exact treatments, early diagnosis may help the physician decide on the proper medical treatment and thus minimize the damages to your baby. For the detailed screening items, please refer to the education flyer.

II. Optional Screening for Lysosomal Storage Disease (LSD) at your own expenses:
LSD is composed of Pompe Disease, Fabry disease, Gaucher's disease and Mucopolysaccharidoses (MPS I and II (MPS II screening is for free), which can be detected using the related enzyme screening (for details, please refer to the education flyer). Currently, enzyme replacement therapy, a genetic engineering technology to produce enzymes that cannot be generated by the patients in vivo, is available for LSD treatment after early diagnosis. In addition, female carriers of Fabry disease are also symptomatic. To enhance test accuracy and sensitivity, the test of LSD for Chinese female babies will focus on frequent mutation points of Fabry disease.

III. Optional Screening for Severe Combined Immunodeficiency (SCID) at your own expenses:
SCID is a cellular immunity plus humoral immunity deficiency disease caused by T-lymphocyte dysfunctions. Patients with SCID usually fail to fight against viral and bacterial infections. The screening of SCID offers an opportunity of early diagnosis and early intervention for your baby. If you intend to allow your baby to receive such a test, please read the education flyer for SCID carefully to understand the purposes, methods and the importance of the disorder. Moreover, you should pay attention to the
Taipei Institute of Pathology

following terms:
➢ The inoculation of Bacillus Calmette-Guérin (BCG) vaccine (a live attenuated vaccine) for infants with SCID may cause (BCG-induced) tubercle bacillus infection, and thus lead to sequelae or death. The incidence of SCID is at 1.4/100,000. For those neonates receiving SCID screening, it is recommended to receive the BCG vaccine after the test results are confirmed to be SCID-negative. According to the Centers for Disease Control, the recommended BCG vaccination should be scheduled at the age of 5 months of the neonate (the recommended vaccination period is between the age 5-8 months).
➢ Currently, the probability of tubercle bacillus infection is 1-2/100,000. If a person without BCG vaccination is infected with the tubercle bacillus, the risks of tuberculous meningitis, sequelae and death are 40 times of those with BCG vaccination. Therefore, prior to the BCG vaccination, please prevent your baby from coming in contact with patients with tuberculosis if possible (e.g. prevent coughing relatives or friends from visiting or caring your baby, etc.).

IV. Optional Screening for Biotinidase Deficiency (BD) at your own expenses:
The disorder can be classified as a profound deficiency or partial deficiency depending on the severity of the clinical presentations. Some clinical symptoms are irreversible, but some may be cured or prevented through oral intake of biotin. For detailed symptoms, please refer to the education flyer.

V. Adrenoleukodystrophy (ALD):
ALD is a genetic mutation disorder that results in the great amount accumulation of very long chain fatty acids (VLCFA) in the brain white matter and the adrenal cortex. The pathogenic gene of ALD is located in X chromosomes. The clinical presentations may vary due to different ages of onset. In addition to Lorenzo's Oil, bone marrow transplantation and gene therapy are also available at present (for details, please refer to the education flyer).

VI. Spinal Muscular Atrophy (SMA) (free screening):
SMA is an autosomal recessive inheritance disorder caused by genetic defects in SMN1 genes, it results in the degeneration of motor neurons in the anterior horn of the spinal cord, and thus leads to muscle weakness and atrophy. The incidence is estimated at 1/10,000. For the most severe sub-type, SMA1, the clinical manifestations are developed within 6 months after birth, including weak crying, weak milk sucking ability, difficulties in breathing and swallowing, four limbs and trunk severe weakness or floppiness. Most of the babies will die of respiratory failure before they reach 2 years old. The age of onset of SMA2 or SMA3 is in the infancy or childhood, respectively. Currently, the treatment for SMA in clinical practice is mainly based on supportive therapies to ameliorate the occurrence of complications. By 2015/12/16, a total of 18 medications have been in the developmental pipelines for SMA treatment in the world, of which 7 medications are under clinical trial investigations. Through combined medical care, including the neonatal screening program and early diagnosis of SMA, the mortality rate as well as the morbidity rate of SMA can be significantly reduced.

Not all parents have received gene carrier tests at present. Therefore, a comprehensive neonatal screening program is helpful to achieve the early detection and early diagnosis, so the medical team can provide integrative care to the indicator earlier. This study aims to investigate whether or not the SMN1 copies in the neonatal screening program are helpful in detecting neonates with SMA earlier, and thus provide the proper clinical care to the patient through early diagnosis. Unfortunately, if your baby is confirmed to be a patient with SMA, your baby's rights to take private insurance could be influenced. Ninety-five percent of SMA patients can be detected through this test. However, the test cannot detect the condition in approximately 5% of patients who have normal SMN1 copies but abnormal SMN1 functions.
Taipei Institute of Pathology

In addition, the clinical presentations may be milder in the patients with several copies of SMN2 genes. Only long-term follow-ups are capable of detecting the onset of SMA as early as possible.

If you agree to participate in this screening program, we will use your baby’s blood sample originally collected for neonatal screening for this test. No additional sample collection or charges are needed. The abnormal test results are estimated to be one in 10,000 neonates. The infant with abnormal findings will be asked to return to the hospital for a definitive diagnosis. If the diagnosis is confirmed, the parents should consider allowing their babies to receive long-term follow-ups and initiate the related clinical assessments as early as possible for proper clinical interventions with the best timing.

If no abnormal neonatal screening findings are found, this does not indicate 100% negative results. The consultation with the pediatrician is still required if your baby displays any discomfort. If the values in the screening results are within high-normal range, you will be asked to bring your baby back for a re-test. This does not indicate that your baby is suffering from such disorder. For the most part, the high-normal value suggests a premature blood sample collection time or insufficient blood volume. All you have to do is to return to the hospital for the re-check of your baby. For details, please refer to the education flyer. If you are willing to participate in the screening program, please sign the following consent form and return the consent form to the nurse or pediatrician who is responsible for your baby’s care.

The Taipei Institute of Pathology Website: http://www.tipn.org.tw TEL: (02) 85962065 (02)85962050 ext. 401-403

The Neonatal Screening Room Cares about Your Baby’s Health

TEL: (02)85962050 ext. 401-403 Direct line: (02) 85962065
Website: https://www.tipn.org.tw (This slip is retained by the legal representative)

Printed in July 2017

Declaration of the legal representative:

I have read the associated information regarding the Neonatal Screening Pilot-Study Program carefully, and I have understood the objectives and methods of the program and the importance of the disease. All queries had been explained fully by the medical staff and thus, I have understood the above contents completely. I am selecting the following screening programs on my own free will:

☑ Agree ☐ Disagree to accept the optional TM screening
☑ Agree ☐ Disagree to accept the optional screening for LSD at my own expenses
☑ Agree ☐ Disagree to accept the optional screening for MPS-II for free
☑ Agree ☐ Disagree to accept the optional screening for SCID at my own expenses
☑ Agree ☐ Disagree to accept the optional screening for BD at my own expenses
☑ Agree ☐ Disagree to accept the optional screening for ALD at my own expenses
☑ Agree ☐ Disagree to accept the optional screening for SMA

Legal representative: (Signature) ID No. (ARC No.):

Please leave the correct corresponding phone number: ________________ Cell Phone: ________________

Date: yyyy mm dd This slip is retained by the delivery hospital.