

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Autism

Male, 17 years, June - June 2019

#### Summary

Diagnosis	Sex	Age	Nationality
Autism	Male	17 years	British
Injections	Cell type	Admission date	Discharge date
6	<a href="#">UCBSC</a> + <a href="#">UCMSC</a>	June 2nd 2019	June 16th 2019

#### Condition On Admission

The patient was able to follow verbal commands for easy tasks and needed physical guidance for complex ones. Verbal language was non-existent and the patient was using body language or oral sounds to communicate. He was very sensitive to loud noises and lacked self-awareness. He could not accept that our therapists touch or hold him and would not do any activity with them. In terms of sensory integration, he had tactile oversensitivity in the lower body. For instance he could not put his feet or his knees on different textures. In terms of perception, he could match colors, pick an animal, a color, or a fruit from 2 choices. The concept of numbers was still hard to comprehend for him. Prior to our treatment program, he had been having ABA, OT, speech, PT and play therapy back home.

#### Treatment Schedule

The patient received 3 umbilical cord blood-derived stem cell (UCBSC) packets and 3 umbilical cord-derived mesenchymal stem cell (UCMSC) packets by intravenous (IV) and intrathecal injections, as per the schedule below. In addition to stem cell injections,

the patient received a daily rehabilitation therapy program that included occupational therapy, aquatic therapy, transcranial magnetic stimulation and fecal microbiota transplant.

Number	Date	Cell Type	Delivery Method	Side Effects
1	2019-06-03	<a href="#">UCMSC</a>	<a href="#">Intravenous Injection</a>	none reported
2	2019-06-06	<a href="#">UCMSC</a>	<a href="#">Intrathecal Injection</a> & <a href="#">Intravenous Injection</a>	none reported
3	2019-06-11	<a href="#">UCBSC</a>	<a href="#">Intrathecal Injection</a> & <a href="#">Intravenous Injection</a>	none reported
4	2019-06-14	<a href="#">UCBSC</a>	<a href="#">Intravenous Injection</a>	none reported

## Condition at discharge

After completing our therapeutic program, the patient's trust and social abilities improved and he was participating more with the therapists. His sensory integration has improved as well and he has started placing his feet and his knees on a puzzle during activities. Regarding his eating pattern, the patient's mother reported that he has just started eating new foods, such as rice, crackers, banana, pasta, carrots, and a variety of green vegetables. This shows that his oral tactile sense has gradually improved. Cognition and communication-wise, he could now follow 2 step-commands better (restricted to one easy step command prior to starting the treatment). Finally, the patient started to understand the concept of numbers; He could for instance conclude and answer a question such as "How many?" (limited to numbers from 1 to 5). Sometimes, he imitated the therapist's voice with very light sounds of numbers and easy words, such as, "one", "fo", "fa", "yeh".

## Condition 3 months after treatment

At the 3 month follow up point the patient's mother evaluated the improvements made as "moderate". She thought that the patient's quality of life had moderately improved and she mentioned: "The improvements have reached their peak and are stable" . Please see an excerpt from the patient's mother's 3 month assessment below:

Symptom	Parents' Assessment of Improvement
Anxiety or fearfulness	Small improvement
Appropriate facial expressions	Moderate improvement
Asking questions	Small improvement

Aware of danger	No improvement
Aware of environment	Small improvement
Comfortable with physical contact	Moderate improvement
Concentration	Moderate improvement
Cooperation with others	Moderate improvement
Dressing himself/herself	Significant improvement
Expressing own needs	Small improvement
Fixation on objects or subjects	Small improvement
General conversation	Small improvement
General mood	Small improvement
Hyperactivity	Small improvement
Interaction with others	Moderate improvement
Interest in others	Small improvement
Limited diet	Significant improvement
Over/under eating	Significant improvement
Plays appropriately	Moderate improvement
Repetitive movements	Small improvement
Responding to commands	Moderate improvement
Rigidity in routine	Moderate improvement
Sensitivity to pain	No improvement
Showing imagination	Moderate improvement
Sleep disturbance	Small improvement
Understanding stories	No improvement
Uses eye contact	Moderate improvement
Uses greetings	Moderate improvement
Using more than one word at a time	No improvement
Using sentences	No improvement