# Video Presentation

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# CNS, Neurosurgery & Stroke 2019









Joint event on

8<sup>th</sup> International Conference on NEUROLOGICAL DISORDERS, CENTRAL NERVOUS SYSTEM AND STROKE & International Conference on NEUROLOGY AND NEUROSURGERY December 04-05, Dubai, UAE

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### Interdisciplinary review on 6 concepts relevant to unconscious social interaction

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ny phenomenon from everyday life that is routine Aand mundane for all of us, if it exists, then it should be visible from and can manifest itself through different studies. Thus, the observation of various studies from different social sciences has been chosen to find evidence of unconscious mental collaboration between individuals. The aim of this review is to substantiate our assumption that unconscious social interaction occurs through two ways: perceptual unconscious interaction and nonperceptual social interaction, justifying it, by analyzing findings through studies on 6 well-known concepts: Theory of Mind (ToM), Visuospatial Perspective taking (VSP), Implicit memory, Unconscious thinking, Interpersonal perception, and Socialization. The chosen methodology was to highlight the manifestations of non-perceptual social interaction in the studies that were selected in connection with the following restrictions: A focus on group or interpersonal collaboration; reduced cultural

influence, which was realized by choosing studies of fetuses and infants; absence or minimal amount of verbal and non-verbal communication between participants; the ability to contrast the collective results with the individual results under the same conditions. Concluding reflections on the findings authors suppose that thinking is socially mediated and that it depends on a collaboration with the environment, which is partly unconscious and even probably non-perceptual. The review introduces the new concept of non-perceptual social interaction, developing knowledge about social interaction, which is a fundamental set of tools in the formation of social reality.

### Biography

Igor Val Danilov is working in Marconi International University. He has done many research work in the field of Neuroscience.

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e-Poster

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# Nutritional Intervention Protocol (NIP) for patients diagnosed with Idiopathic Intracranial Hypertension (IIH)

Maria Tubilleja Cubillo, Gina Llado-Jordan Universidad Isabel I, Spain

Intracranial hypertension is a condition due to high pressure within the spaces that surround the brain and spinal cord. These spaces are filled with Cerebrospinal Fluid (CSF), which cushions the brain from mechanical injury, provides nourishment, and carries away waste. Intracranial hypertension can be either acute or chronic. Chronic intracranial hypertension can be caused by many conditions but can also occur without a detectable cause. This is Idiopathic Intracranial Hypertension (IIH). IIH presents low incidence. The annual incidence of IIH in is about 3/100,000. The highest risk group is: women of childbearing age (18 to 45 years) and overweight or obese. Therefore, the modifiable risk factor is weight.

Currently, treatments are only useful for the patient's symptoms and quality of life. These treatments are as follows: pharmacological treatment to decrease the production of CSF, nutritional treatment to reduce weight, and surgical treatment to reduce the pressure exerted on the optic nerve and divert the elimination of CSF to other body areas.

The main objective of this study is to develop a Nutritional Intervention Protocol (NIP) to standardize nutritional

intervention in patients with IIH. The protocol includes a complete nutritional evaluation and, also, a personalized diet for each patient following the standard and verified recommendations.

Nowadays, no similar protocols exist. Only guidelines have been found in which it is recommended that patients should reduce their weight in order to improve their symptoms. Other authors verify that weight reduction is effective in the short term, but in long term it is difficult to maintain the weight achieved. That is why our protocol is important in IIH.

Finally, it should be noted, that not only the protocol is important but also nutritionists' work (in a multidisciplinary team) to address diseases that can be modified through nutrition.

### Biography

Maria Tubilleja completed her Degree in Pharmacy at Universidad de Salamanca (Spain) in 2013. After that she has completed her Degree in Human Nutrition and Dietetics at Universidad Isabel I (Spain) in 2019. She currently works as a pharmacist. His research focuses on Nutrition and Pharmacy.

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### The role of malfunctional mitochondria in the development of Parkinson's disease

### Hari Pai

King's College London, UK

**Statement of the Problem**: Parkinson's' Disease is the second most common neurodegenerative disorder in the world. It is thought to occur due to degradation of dopaminergic neurons within the substantia nigra pars compacta of the basal ganglia. This paper elucidates on a theory that one potential reason for Parkinson's developing is due to problems with mitochondria.

**Methodology & Theoretical Orientation**: A literature review of 2 web databases (PubMed, Web of Science) yielded the papers which were used in this review.

**Findings**: The problems with mitochondria are thought to come by a variety of factors. Factors offered in this paper include the mutation or absence of parkin or PINK1 genes. This alteration in parkin and PINK1 leads to changes in the mitochondria which are present in the human body. These

can lead to compromised complex activity and increased oxidative stress. Increased oxidative stress (via free radicals or reactive oxygen species) can lead to deletion of mtDNA (with mitochondria having its own genome). The deletion of mtDNA is a problem as it is known to be one of the factors leading to Parkinson's.

#### Biography

Hari Pai has completed his MSc in Clinical Neuroscience from King's College London and is currently under taking an MBBS in Medicine at that same university. He has 2 publications and has presented multiple posters at international conferences. He is the LSNeuron Rep for his universities Neuroscience society and also the Vice-President of the Clinical Academic Research Society at King's.

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# Accepted Abstracts

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### A novel device to simulate traumatic Brain injury

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raumatic brain injury (TBI) is a major health concern in children and adults as it has been proposed as a risk factor for the development of subsequent neurologic diseases that often lead to irreversible brain damage or death. A meta-analysis of TBI identified several key associations, notably etiological pathology and complications from the nature of the injury, and various clinical presentations. The exact mechanism of cellular injury is not well understood. This novel device allows for varied shockwave propagation to simulate cellular injury and independently study the role of shockwave pressure change and shear force damage. The purpose of this device is to determine the overall consequences of traumatic exposure to brain tissue, and to provide a system in which tissue could be directly observed during and immediately after exposure to shockwave propagation. The pneumatic air-gun based device delivers a blast via a quick release

valve directly to the 96-well culture plate positioned on top of a microscope. Modulating the volume of fluid in the well allows for independent control over shear forces generated by the blast shockwaves. The device is used in a laboratory controlled system with high temporal and spatial resolution. Novelties include real-time cellular imaging and analysis of explosive shockwaves, screening for pharmacological compounds that may ameliorate the effects of a brain trauma, testing materials capable of protecting cells from trauma, and identifying the best treatment and diagnostic path based on injury from head trauma. Future applications will be used to study pharmacological effects of calcium signaling in response to trauma, search for additional signaling pathways in response to varying intensities, and expand the system to allow for study of entire organs.

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### Post-operative outcomes after Neurosurgery for Brain tumour excision: A singlecentre service evaluation

### Mohini Panikkar

University of Birmingham Medical Society, United Kingdom

**Introduction**: Each year, approximately 4400 patients in the UK are newly diagnosed with a brain tumour.(1,2)The most commonly presenting tumours are gliomas, meningiomas and metastases.(2) Post-operative infection rates range from 2-4% with some patients requiring surgical washouts and re-do surgeries to address complications.(2) Variables such as previous radiotherapy and chemotherapy have been shown to significantly increase post-operative infection rates after craniotomies in similar patient groups however limited data exists on the effect of diabetes and adjunctive immunosuppression.(3,4)

**Aims**: The primary aim of this service evaluation is to investigate the effectiveness of brain tumour excision surgeries performed at the Queen Elizabeth Hospital by assessment of post-operative outcomes. In doing this we also hope to identify risk factors for poor outcomes to develop quality initiatives to improve (clinical outcomes and patient experience) in this service.

**Methods**: A retrospective analysis of 333 patients who had undergone neurosurgery for brain tumour excision was conducted to assess rates of post-operative infection, wound washouts, redo surgeries and mortality rates. Risk factors such as diabetes, pre-operative chemotherapy, radiotherapy and immunosuppression were also assessed to identify a specific cohort of patients who were most vulnerable to poor post-operative outcomes.

**Results**: The infection rate at the Queen Elizabeth Hospital was 4%, which is the upper limit of the national average (2-4%), demonstrating adequate infection control measures and the mortality rate was marginally lower at 2.4% (National average is 3%.) An isolated 'at-risk' group of patients was also identified: Immunosuppressed patients undergoing Glioblastoma resection.

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# Decompressive Craniectomy following severe traumatic Brain injury with an initial Glas-gow coma scale score of 3 and 4

### Afif Afif

Hospital Center of Sens, France

**Background**: Decompressive craniectomy formed as surgical management option for severe traumatic brain injury (TBI). Few studies that follow the TBI patients with a Glasgow coma scale (GCS) score of 3 or 4. Decompressive craniectomy was avoided in these patients due to the poor outcomes and the worse func-tional recovery.

**Clinical Presentation**: Two patients were presented in our case series. The first one suffered of severe TBI following an aggression with a Glasgow coma scale (GCS) score of 3/15 and bilaterally dilated unreactive pupils. A brain CT-scan showed right frontal fracture, bifrontal hematoma contusion, a fronto-temporo-parietal acute subdural hematoma (SDH) with a thickness of 14 mm on the right side, traumatic subarach-noid hemorrhage, with 20 mm of midline shift to the left side, diffuse brain edema. The second one pre-sented with severe TBI following an

automobile accident with a GCS score of 4/15 and isoreactive pupils. A brain CT-scan showed bilateral frontotemporal fracture, diffuse brain hematoma contusion, traumatic subarachnoid hemorrhage, right extradural hematoma (EDH) and bilateral fronto-temporo-parietal acute subdural hematoma (SDH) more important in the right side.

**Discussion and Conclusion**: Our case series suggest that the wide adequate decompressive craniectomy in patients with severe TBI and GCS score of 3 or 4 can be performed and useful to obtain good long-term neurological outcomes with a good functional recovery. The rapidity of the surgical indication decision can be option to obtain the better neurological outcomes.

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### Static Apnoea in people with physical impairments

### Ana Golez

Celje General and Teaching Hospital, Slovenia

**Statement of the Problem**: People with disabilities try to stay independent in daily life activities. They also try to participate in sport activities, to feel free, independent, satisfied and happy.

In PubMed there are no articles about static apnoea in disabled people. Some articles exist on self-contained underwater breathing apparatus (SCUBA) diving in people with disabilities. In the publishes articles it is written, that scuba diving participants felt less anxiety, depression, reported better quality of sleep and improved social functioning (1-5). The purpose of this study is to describe the first static apnoea diving in disabled people.

**Methodology & Theoretical Orientation**: On the 28th April 2019 tetra- and paraplegics from five countries competed in freediving under supervision of physician, lifeguard and professional divers. In the beginning participants were prepared for breathless diving and participated in 3-minute deep relaxation. At first, they tried freediving and later duration of breathless dive was measured.

**Findings**: The longest dive lasted 4 minutes and 48 seconds. There were no complications and in the end of competition all competitors felt very well. There was also no samba phenomenon.

No article on apnoea or freediving in people with disabilities exist. In articles about scuba diving at disabled persons so far only positive consequences are reported (1-5). The current World record in free dive for men is more than 10 minutes and almost 6 minutes for women. Apnoea and scuba diving in para- and especially tetraplegics or tetra paretic people must be done with an appropriate equipment and under strict supervision of a professional diver, lifeguard and physician to prevent complications (1-6).

**Conclusion & Significance**: All divers felt very well after apnoea diving and there were so complications. In the future further research should be done on apnoea diving in people with physical impairments.

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# Acute Myeloid Leukemia with Central Nervous System extension and subdural seeding of Vancomycin-resistant *Enterococcus faecium* after bilateral subdural Hematomas treated with subdural Daptomycin administration

### **Nicholas Dietz**

Georgetown University School of Medicine, USA

 $\mathbf{V}$ e present a rare case of comorbid relapsed acute myeloid leukemia (AML) with involvement of the central nervous system (CNS) and subdural seeding of vancomycin-resistant-Enterococcus faecium (VRE). The safety profile, treatment approach with pharmacokinetic considerations, and evaluation of success for bilateral subdural administration of daptomycin after subdural hematoma is assessed. A 45-year-old male with history of AML who underwent chemotherapy (induction with 7+3) was admitted to oncology with relapsed AML confirmed by bone marrow biopsy, complicated by neutropenic fever and VRE bacteremia. After acute neurological changes with image confirmation of mixed-density bilateral subdural hematomas secondary to thrombocytopenia, the patient was admitted to the neurosurgery unit and underwent bilateral burr-hole craniotomies for subdural evacuation with placement of left and right subdural drains. Culture

of the subdural specimen confirmed VRE seeding of the subdural space. The patient received the first dose of daptomycin into the bilateral subdural spaces two days after evacuation and was noted to have acute improvement on neurological exam, followed by a second administration to the left subdural space 5 days after evacuation with bilateral drains pulled thereafter. In this patient, the complication of relapsed AML may have contributed to the rare extension of VRE into the CNS space. Screening for patients at risk of AML with CNS involvement and addressing coagulopathy and risk of infection may help mitigate morbidity. Bilateral administration of subdural daptomycin bolused into the subdural space was tolerated and possibly contributed to the patient's neurological improvement during an extended hospital course.

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