

Media Release: European College of Neuropsychopharmacology

Birth season affects your mood in later life

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Berlin 19th October New research shows that the season you are born has a significant impact on your risk of developing mood disorders. People born at certain times of year may have a greater chance of developing certain types of affective temperaments, which in turn can lead to mood disorders (affective disorders). This work is being presented at the European College of CNP Congress in Berlin.

Seasons of birth have traditionally been associated with certain personality traits, such as novelty seeking, and various folklore justifications, such as astrology, have sought to explain these associations. Now a group of researchers from Budapest, Hungary, are presenting a study which links birth season with temperament.

According to lead researcher, Assistant Professor Xenia Gonda

“Biochemical studies have shown that the season in which you are born has an influence on certain monoamine neurotransmitters, such as dopamine and serotonin, which is detectable even in adult life. This led us to believe that birth season may have a longer-lasting effect. Our work looked at over 400 subjects and matched their birth season to personality types in later life. Basically, it seems that when you are born may increase or decrease your chance of developing certain mood disorders”.

“We can’t yet say anything about the mechanisms involved. What we are now looking at is to see if there are genetic markers which are related to season of birth and mood disorder”.

The group found the following statistically significant trends:

- **cyclothymic** temperament (characterized by rapid, frequent swings between sad and cheerful moods), is significantly higher in those born in the summer, in comparison with those born in the winter.
- **Hyperthymic temperament** – a tendency to be excessively positive - were significantly higher in those born in spring and summer
- Those born in the winter were significantly less prone to **irritable temperament** than those born at other times of the year.
- Those born in autumn show a significantly lower tendency to **depressive temperament** than those born in winter.

Commenting for the European College of Neuropsychopharmacology, Professor Eduard Vieta (Barcelona) said:

“Seasons affect our mood and behavior. Even the season at our birth may influence our subsequent risk for developing certain medical conditions, including some mental disorders. What's new from this group of researchers is the influence of season at birth and temperament. Temperaments are not disorders but biologically-driven behavioral and emotional trends. Although both genetic and environmental factors are involved in one's temperament, now we know that the season at birth

plays a role too. And the finding of "high mood" tendency (hyperthymic temperament) for those born in summer is quite intriguing."

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Notes for editors

Please mention the European College of Neuropsychopharmacology Congress

in any stories which result from this press release.

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The ECNP is an independent scientific association dedicated to the science and treatment of disorders of the brain. It is the largest non-institutional supporter of applied and translational neuroscience research and education in Europe.

ECNP organises a wide range of scientific and educational activities, programmes and events across Europe, promoting the exchange of high-quality experimental and clinical research and fostering young scientists and clinicians.

The annual ECNP Congress takes place in Berlin from 18-21 October. It is Europe's premier scientific meeting for disease-oriented brain research, annually attracting between 5,000 and 8,000 neuroscientists, psychiatrists, neurologists and psychologists from around the world. Website: www.ecnp.eu

ABSTRACT This work is being presented at 11.45 on Sunday 19th October (CEST)

P.1.k.008 Season of birth shows a significant impact on the distribution of affective temperaments in a nonclinical population X. Gonda¹, P. Erdos², M. Ormos², Z. Rihmer³ *1Semmelweis University, Department of Clinical and Theoretical Mental Health Kultvolgyi Clinical Center, Budapest, Hungary; 2Budapest University of Technology and Economics, Department of Finance, Budapest, Hungary; 3Semmelweis University, Department of Clinical and Theoretical Mental Health Kutvolgyi Clinical Center, Budapest, Hungary*

Objective: Periodicity, cyclicity, and annual rhythms (including seasonality) that are inherent characteristics of living organisms have been reported for diverse physiological and pathological conditions and phenomena. Season of birth has been considered to be an important element determining personality and illness already in the pre-scientific medical era and this tradition lives on in several contemporary concepts ranging from astrological beliefs to science. Several studies indicate a significant effect of season of birth on personality traits and characteristics, neuropsychiatric disorders such as schizophrenia, unipolar and bipolar major depression, epilepsy and brain tumors. Season of birth was also associated with central monoamine and monoamine metabolite levels in several studies. Therefore season of birth is of peculiar interest when studying the effect of environment in the development of several psychological and psychiatric phenomena. A relationship between birth season and novelty seeking has been described and confirmed in several studies. However, affective temperaments have not so far been studied with respect to their association with birth season. The aim of our present study was to investigate the possible association between affective temperaments and season of birth in a nonclinical sample. **Methods:** 366 university students (mean age 20.59 years; 258 males) completed the standardized Hungarian version of the Temperament Evaluation of Memphis, Pisa, Paris and San Diego- Auto-questionnaire. Ordinary

Least Squares (OLS) regression was applied to explain the relationship between TEMPS-A subscale and birth season of the respondents. Consistent standard errors were estimated using consistent covariance matrix estimation. We compiled 11 dummy variables for the month of birth from February to December and three other for the season of birth from spring to autumn; that is, we used January and winter as a point of reference. Seasons were defined according to the astronomical definition. **Results:** OLS regression indicated that cyclothymic temperament has significantly higher scores in those born during summer compared to winter borns ($b=0.0505$, $p = 0.0345$). For the Depressive temperament, OLS regression indicated significantly lower scores in those born during autumn compared to winter borns ($b = -0.0447$, $p = 0.0138$). Hyperthymic temperament had significantly higher scores in spring and autumn borns compared to winter borns ($b=0.0706$, $p = 0.0068$; $b=0.0680$, $p = 0.0138$). Concerning the Irritable temperament, the results indicate that this temperament has significantly lower scores in those born in winter compared to subjects born in all other seasons (spring: $b=0.0618$, $p = 0.0112$; summer: $b=0.0398$, $p = 0.0001$; autumn: $b=0.0840$, $p = 0.0003$). **Conclusions:** Our results support the evidence that there is a strong association between season of birth and personality, extending the results to affective temperaments as well. Furthermore, our results are in line with clinical observations concerning the seasonal variation of onset and hospitalization due to affective episodes. This is especially important, since affective temperaments are conceived as the subaffective and subclinical manifestations of major and minor affective disorders indicating a risk for the development of these disorders and also exerting a possible patoplastic effect, thus our results also have clinical significance.