

Coffee at night disrupts body's internal clock

Drinking coffee before bedtime disrupts the body's internal clock, making it harder to get to sleep on time and more challenging to wake up in the morning, US researchers said recently.

The findings in the journal Science Translational Medicine not only explain why evening caffeine-drinkers may stay up – and wake up – late, but could also offer travellers

a way to time their caffeine use in order to limit the effects of jet lag, researchers said.

The study involved five volunteers who were randomly assigned to consume as much caffeine as contained in a double espresso three hours before bed, or who were exposed to bright lights, or were given a placebo.

Over the course of 49 days, the

volunteers were studied under various conditions, and their saliva was regularly tested for levels of the hormone melatonin, which naturally regulates sleep and waking cycles.

They found that those who took caffeine in low-light conditions experienced about a "40-minute phase delay of the circadian melatonin rhythm", said the study.

Those who were exposed to

bright overhead lights three hours before bed saw their circadian clocks bumped back by 85 minutes.

Those who took both the caffeine and sat under bright lights were disrupted by 105 minutes.

"This is the first study to show that caffeine, the mostly widely used psychoactive drug in the world, has an influence on the human circadian clock," said professor Ken-

neth Wright of the University of Colorado, Boulder.

"It also provides new and exciting insights into the effects of caffeine on human physiology."

While the findings reinforce the common advice to avoid caffeine before bed, the study said it also raises the "intriguing" possibility that proper use of caffeine could help reset the body's clock in order

to avoid jet lag.

However, more research is needed to determine how travellers crossing time zones should best use caffeine to stay alert.

"It will be important to monitor for caffeine-induced sleep disruption under such conditions, which could worsen jet lag," said the study.

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An ever more cultured Košice

RAMY SALAMEH

In recent years, Košice has metamorphosed from industrial chrysalis to cultural butterfly. Being European Capital of Culture in 2013 has left a lasting legacy, propelling Slovakia's second-largest city from industrial heartland to a creative cultural centre. But it is the city's historical avenue Hlavná Ulica, with its classical elegance and rich heritage, that continues to be the artery connecting the past, present, and future of Košice.

Historic centre from above

Sitting in the eastern part of Slovakia, close to both the Ukrainian and Hungarian borders, the city once held a strategically important medieval trading position between Europe and Constantinople. Košice was the epicentre of the region's colourful and tumultuous history that over the centuries bounced between invading powers.

RAMY SALAMEH



Crafts Lane (Hrneiarska Street) is historic with its cobble road and small houses, and is where traditional arts and crafts can be found

To peel back these layers, it's worth getting a bird's-eye view of Slovakia's largest old town that dates back to the 13th century. Sigismund Tower, the north tower of St Elisabeth Cathedral, is the place to contemplate the history and beauty of Hlavná Ulica (Main Street) and beyond.

Having climbed the 161 spiralling and narrow stone steps, the view rewarding you from the lookout point is dramatic. Immediately below, the "singing fountain" sprays water high into the air, prancing and pirouetting to music as if on stage at the state theatre that it sits before. The grand theatre building was designed by Adolf Lang and is a mixture of Neo-baroque and Art Nouveau styles.

The roof tiles of St Elisabeth Cathedral are an amazing pastiche of mosaic style in hues of browns, yellows, blues, and whites, with majestic buttresses and gargoyles. Construction of the cathedral started around 1380 and it is the eastern-most Gothic cathedral in Europe. It boasts a rare double spiral staircase (one of just five of its kind in Europe), and the Altar of St Elisabeth and a sundial dating from 1477 are just some of the many highlights. In the immediate surrounds of the church you will find the Bell Tower of St Urban – the patron saint of wine makers.

Looking south from Sigismund Tower, St Michael's Chapel dates to the 14th century and is another fine example of Gothic architecture. Beyond the chapel, a bronze statue of the current Košice coat-of-arms stands proud. The original was granted to the city in 1369 by King Louis the Great, and Košice was the first in Europe to receive such a privilege.

Exploring on foot and beyond
What cannot be seen or felt from the 60-metre-high perch in the

tower is the buzz in the cafes, wine bars, and restaurants that spill out onto the pavements. Hidden gems form part of any exploration on foot into the cobbled alleyways and side streets that run parallel to the aristocratic palaces, churches, and historic dwellings that line both sides of Hlavná Ulica.

On Zbrojnicná Street, the seated sculpture of Sándor Márai, one of the 20th century's great literary figures, is quietly in repose. The sculptor, Peter Casper, has captured Márai's relaxed yet contemplative mood with a companionable sense of well-being. It is as if the author will rise to his feet and guide you around the city of his birth that reverberates in his literary work. If he was still alive today, he would find much of the historic centre still resonates with his earliest memories. He could point out the house of his birth, the Premonstratensian School he attended, and even the former confectionary store where he met his wife during an ice cream-eating competition, all of which can be visited.

From above and at ground level the city is such an anomaly. Contemporary murals co-exist with ancient frescos, and the historic central promenade (deserving of UNESCO World Heritage status) is surrounded by the soviet-style apartment blocks built for workers of the nearby steel plant.

The creative hubs of the city remain just a few steps from the historic centre, connecting the past with the future. These are the Kulturpark – a former military barracks; and the Kunst-halle – a former swimming pool, built in the 1950s by architect Ladislav Grec.

Beyond that the high-rise concrete gives way to some of the most extensive forests in central Europe. Exploring the surrounding region is every bit as inter-



Evening view of Hlavná Ulica

esting and engaging as the city itself. Just over a one-hour drive southeast of Košice and the Tokaj wine region is the perfect terroir for the cultivation of fine wines.

Within the "tufa cellars" are the oak barrels that age and mature the "wine of Kings and the King of wines", as was remarked by Louis XIV, who drank it in the 17th century at the French Royal Court.

Bratislava may be the capital but Košice is proving to be the country's creative hub bolstered by a quirky and independent air that has appealed to emperors, kings, presidents, and popes, and is now attracting a new wave of artists, entrepreneurs, and tourists.

This east Slovakian city really is shouting from the top of Sigismund's Tower and more than ready to host the next big event, as European Capital of Sport 2016. After all, this is where Europe's oldest marathon is run.

Ramy Salameh flew with www.wizzair.com from London Luton to Košice combined with rail travel with www.internationalrail.com. For more information go to www.visitkosice.eu

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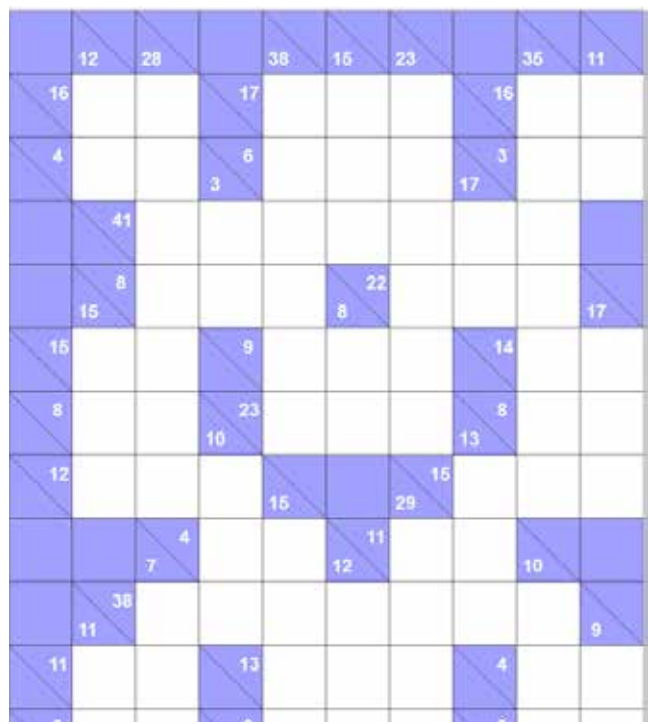


The tiled roof of St Elisabeth Cathedral, Hlavná Ulica, Kosice

PUZZLES

KAKURO

Kakuro puzzles are like crosswords that use numbers instead of words. The goal is to fill the blank squares associated with a clue (called a "run") with the numbers 1-9 so that the numbers add up to the corresponding clues. Like Sudoku, digits in a run cannot repeat. When the grid is filled, the puzzle is complete.



SU DOKU

Fill in the boxes using numbers between 1 and 9 so that each column, each row, and each 3x3 square contain all nine numbers only once.

2			5					8
	7			3	8		5	
			2	4				
	1					9		6
	9	2				7	1	
3		6						2
				8	2			
	5		6	7				8
9					5			4

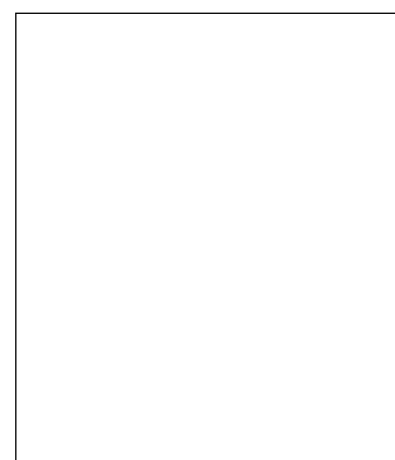
4NUMBERS

Use the numbers and operands provided to make 24. You must use each number once and only once, though the given operands can be used at will. Details provided at: <http://www.4nums.com/theory/>

1 Solution



WORKSPACE



KEN KEN

1. Each row and column must contain the numbers 1 to 6 (hard) or 1 to 4 (easy) without repeating.
2. The numbers within the heavily outlined boxes, called cages, must combine using the given operation (in any order) to produce the target numbers in the top-left corners.
3. Freebies: Fill in single-box cages with the number in the top-left corner.

3-			12x	2-	
7+					
		1	2÷		
2		8+			

4	5-		2²	15x	
11+	1-			3-	
	3-	11+	13+		4
3+					4-
	1-		2-	4	
15x		2		6x	

SOLUTIONS

4NUMBERS 1 UNIQUE SOLUTION

$$(21 \times 17 - 21) \div 14$$

KEN KEN EASY

4	1	3	2
2	4	1	3
1	3	2	4
3	2	4	1

KEN KEN HARD

6	1	4	2	5	3
5	2	6	3	1	4
4	5	4	6	2	1
3	1	5	6	3	4
4	4	2	3	1	5
2	4	3	5	1	6
2	4	1	6	3	5
3	5	2	4	1	6
3	5	1	2	6	4

SU DOKU

9	2	8	3	1	5	6	7	4
1	5	3	6	7	4	2	8	9
4	6	7	9	8	2	5	3	1
8	9	2	4	5	6	7	1	3
7	1	5	8	2	3	9	4	6
5	8	1	2	4	9	3	6	7
6	7	9	1	3	8	4	5	2
2	3	4	5	6	7	1	9	8

KAKURO

9	7	8	6	2	7
3	1	3	1	2	1
6	7	8	9	6	8
5	3	9	6	9	6
2	1	5	8	8	9
6	2	7	8	9	6
5	3	9	6	9	6
2	1	5	8	8	9
6	7	8	6	2	7
3	1	3	1	2	1
9	7	8	6	2	7