In [1]:
```
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import seaborn as sns
sns.set(style="whitegrid")
import matplotlib.pyplot as plt
from collections import Counter
%matplotlib inline

# Input data files are available in the "../input/" directory.
# For example, running this (by clicking run or pressing Shift+Enter) will list

# import os
# for dirname, _, filenames in os.walk('/kaggle/input'):
#     for filename in filenames:
#         print(os.path.join(dirname, filename))
```

In [2]:
```
# ignore warnings
import warnings
warnings.filterwarnings('ignore')
```

In [3]:
```
fifa = pd.read_csv(r"C:\Users\Hp\OneDrive\Desktop\25th, 26th- Advanced EDA proje
```

In [4]:
```
fifa
```

Out[4]:

	Unnamed: 0	ID	Name	Age	Phc
0	0	158023	L. Messi	31	https://cdn.sofifa.org/players/4/19/158023.p
1	1	20801	Cristiano Ronaldo	33	https://cdn.sofifa.org/players/4/19/20801.p
2	2	190871	Neymar Jr	26	https://cdn.sofifa.org/players/4/19/190871.p
3	3	193080	De Gea	27	https://cdn.sofifa.org/players/4/19/193080.p
4	4	192985	K. De Bruyne	27	https://cdn.sofifa.org/players/4/19/192985.p
...	...	...	...	...	
18202	18202	238813	J. Lundstram	19	https://cdn.sofifa.org/players/4/19/238813.p
18203	18203	243165	N. Christoffersson	19	https://cdn.sofifa.org/players/4/19/243165.p
18204	18204	241638	B. Worman	16	https://cdn.sofifa.org/players/4/19/241638.p
18205	18205	246268	D. Walker-Rice	17	https://cdn.sofifa.org/players/4/19/246268.p
18206	18206	246269	G. Nugent	16	https://cdn.sofifa.org/players/4/19/246269.p

18207 rows × 89 columns

In [5]:
```
fifa.head()
```

Out[5]:

	Unnamed: 0	ID	Name	Age	Photo	Natio
0	0	158023	L. Messi	31	https://cdn.sofifa.org/players/4/19/158023.png	Arge
1	1	20801	Cristiano Ronaldo	33	https://cdn.sofifa.org/players/4/19/20801.png	Po
2	2	190871	Neymar Jr	26	https://cdn.sofifa.org/players/4/19/190871.png	
3	3	193080	De Gea	27	https://cdn.sofifa.org/players/4/19/193080.png	
4	4	192985	K. De Bruyne	27	https://cdn.sofifa.org/players/4/19/192985.png	Be

5 rows × 89 columns

In [6]:
```
fifa.info()
```

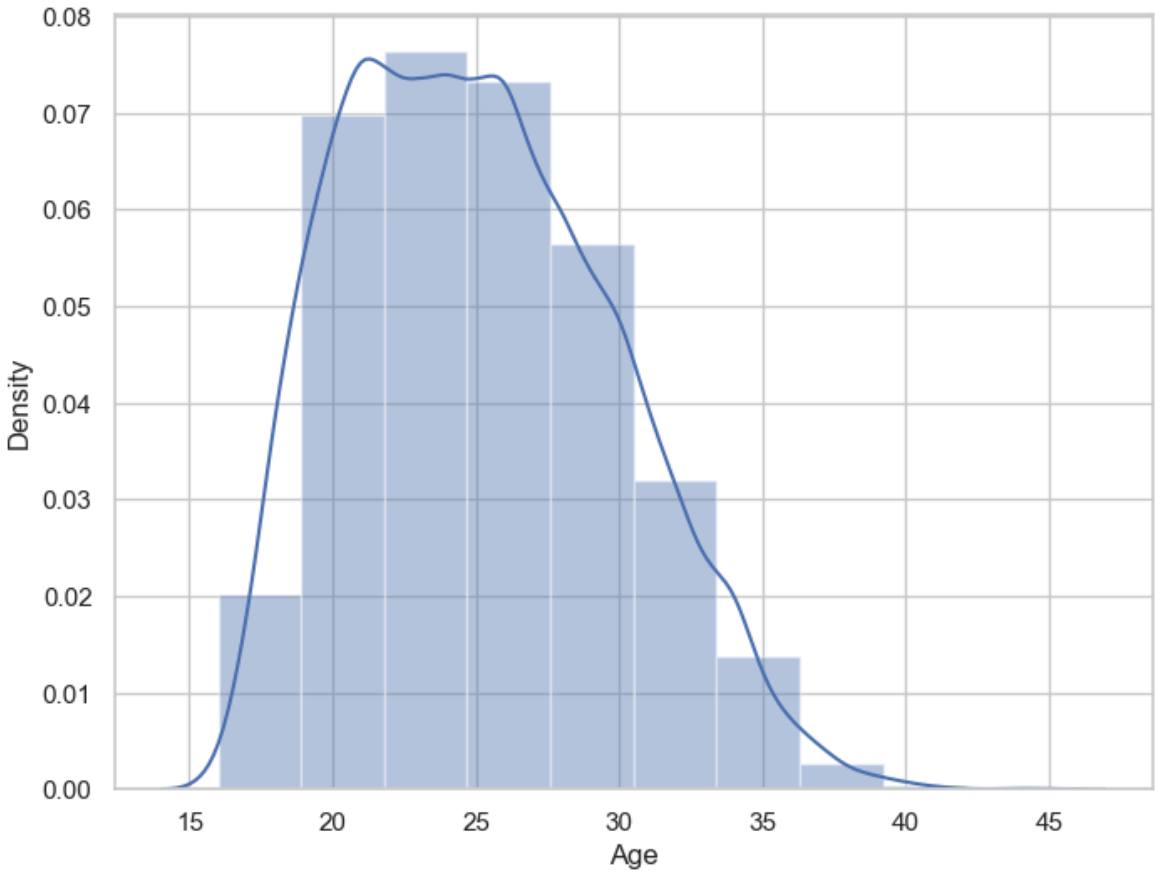
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 18207 entries, 0 to 18206
Data columns (total 89 columns):
 #   Column                    Non-Null Count  Dtype  
---  ------                    --------------  -----  
 0   Unnamed: 0                18207 non-null  int64  
 1   ID                        18207 non-null  int64  
 2   Name                      18207 non-null  object 
 3   Age                       18207 non-null  int64  
 4   Photo                     18207 non-null  object 
 5   Nationality               18207 non-null  object 
 6   Flag                      18207 non-null  object 
 7   Overall                   18207 non-null  int64  
 8   Potential                 18207 non-null  int64  
 9   Club                      17966 non-null  object 
 10  Club Logo                 18207 non-null  object 
 11  Value                     18207 non-null  object 
 12  Wage                      18207 non-null  object 
 13  Special                   18207 non-null  int64  
 14  Preferred Foot            18159 non-null  object 
 15  International Reputation  18159 non-null  float64
 16  Weak Foot                 18159 non-null  float64
 17  Skill Moves               18159 non-null  float64
 18  Work Rate                 18159 non-null  object 
 19  Body Type                 18159 non-null  object 
 20  Real Face                 18159 non-null  object 
 21  Position                  18147 non-null  object 
 22  Jersey Number             18147 non-null  float64
 23  Joined                    16654 non-null  object 
 24  Loaned From               1264 non-null   object 
 25  Contract Valid Until      17918 non-null  object 
 26  Height                    18159 non-null  object 
 27  Weight                    18159 non-null  object 
 28  LS                        16122 non-null  object 
 29  ST                        16122 non-null  object 
 30  RS                        16122 non-null  object 
 31  LW                        16122 non-null  object 
 32  LF                        16122 non-null  object 
 33  CF                        16122 non-null  object 
 34  RF                        16122 non-null  object 
 35  RW                        16122 non-null  object 
 36  LAM                       16122 non-null  object 
 37  CAM                       16122 non-null  object 
 38  RAM                       16122 non-null  object 
 39  LM                        16122 non-null  object 
 40  LCM                       16122 non-null  object 
 41  CM                        16122 non-null  object 
 42  RCM                       16122 non-null  object 
 43  RM                        16122 non-null  object 
 44  LWB                       16122 non-null  object 
 45  LDM                       16122 non-null  object 
 46  CDM                       16122 non-null  object 
 47  RDM                       16122 non-null  object 
 48  RWB                       16122 non-null  object 
 49  LB                        16122 non-null  object 
 50  LCB                       16122 non-null  object 
 51  CB                        16122 non-null  object 
 52  RCB                       16122 non-null  object 
 53  RB                        16122 non-null  object 
 54  Crossing                  18159 non-null  float64
```

```
 55  Finishing                 18159 non-null  float64
 56  HeadingAccuracy           18159 non-null  float64
 57  ShortPassing              18159 non-null  float64
 58  Volleys                   18159 non-null  float64
 59  Dribbling                 18159 non-null  float64
 60  Curve                     18159 non-null  float64
 61  FKAccuracy                18159 non-null  float64
 62  LongPassing               18159 non-null  float64
 63  BallControl               18159 non-null  float64
 64  Acceleration              18159 non-null  float64
 65  SprintSpeed               18159 non-null  float64
 66  Agility                   18159 non-null  float64
 67  Reactions                 18159 non-null  float64
 68  Balance                   18159 non-null  float64
 69  ShotPower                 18159 non-null  float64
 70  Jumping                   18159 non-null  float64
 71  Stamina                   18159 non-null  float64
 72  Strength                  18159 non-null  float64
 73  LongShots                 18159 non-null  float64
 74  Aggression                18159 non-null  float64
 75  Interceptions             18159 non-null  float64
 76  Positioning               18159 non-null  float64
 77  Vision                    18159 non-null  float64
 78  Penalties                 18159 non-null  float64
 79  Composure                 18159 non-null  float64
 80  Marking                   18159 non-null  float64
 81  StandingTackle            18159 non-null  float64
 82  SlidingTackle             18159 non-null  float64
 83  GKDiving                  18159 non-null  float64
 84  GKHandling                18159 non-null  float64
 85  GKKicking                 18159 non-null  float64
 86  GKPositioning             18159 non-null  float64
 87  GKReflexes                18159 non-null  float64
 88  Release Clause            16643 non-null  object
dtypes: float64(38), int64(6), object(45)
memory usage: 12.4+ MB
```

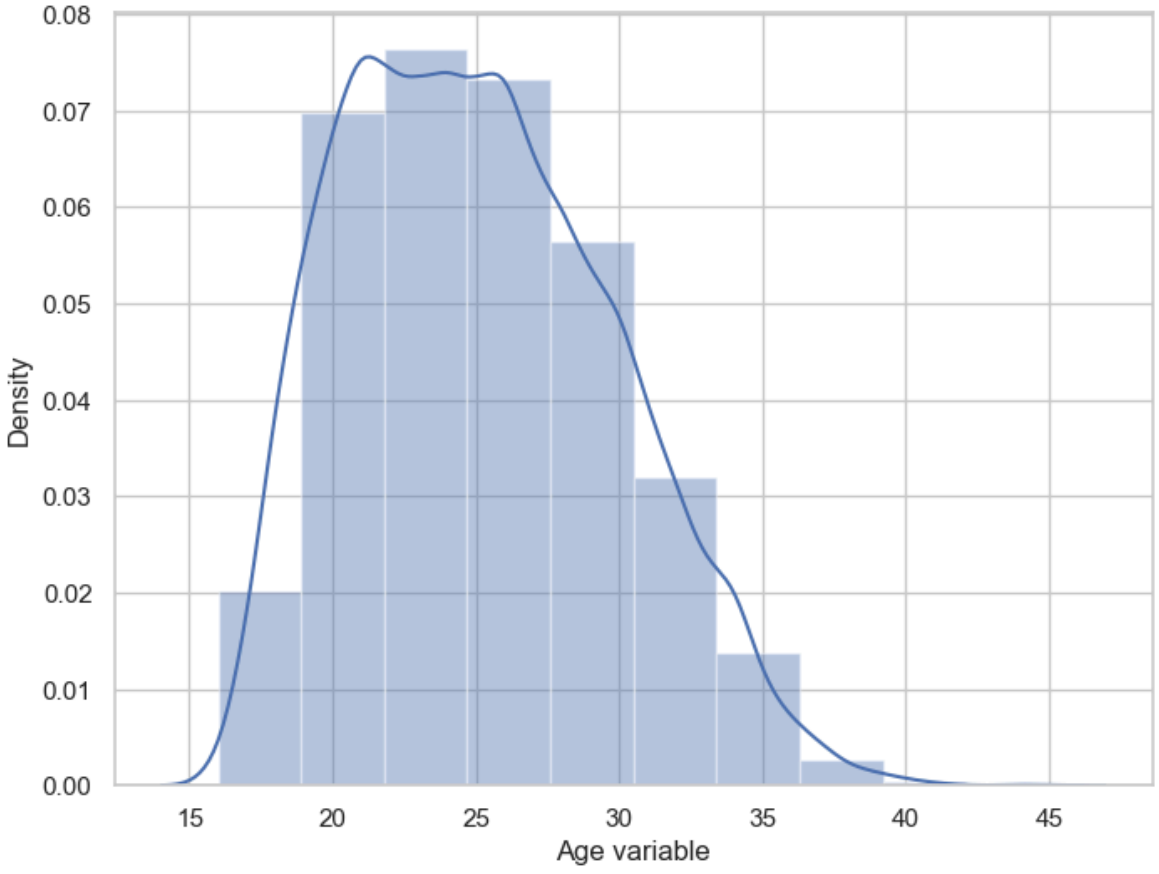
In [7]:
```
fifa['Body Type'].value_counts()
```

Out[7]:
```
Body Type
Normal                10595
Lean                   6417
Stocky                 1140
Messi                     1
C. Ronaldo                1
Neymar                    1
Courtois                  1
PLAYER_BODY_TYPE_25       1
Shaqiri                   1
Akinfenwa                 1
Name: count, dtype: int64
```

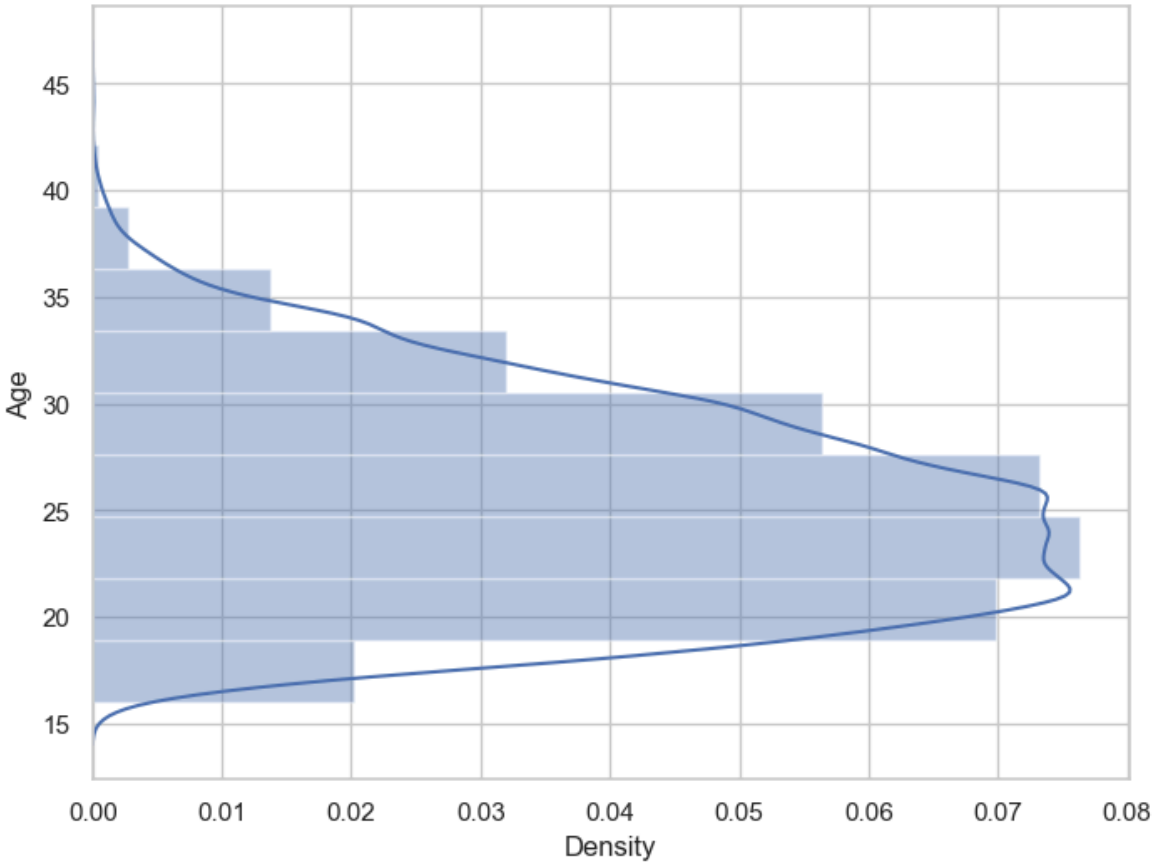
In [8]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
ax = sns.distplot(x, bins=10)
plt.show()
```



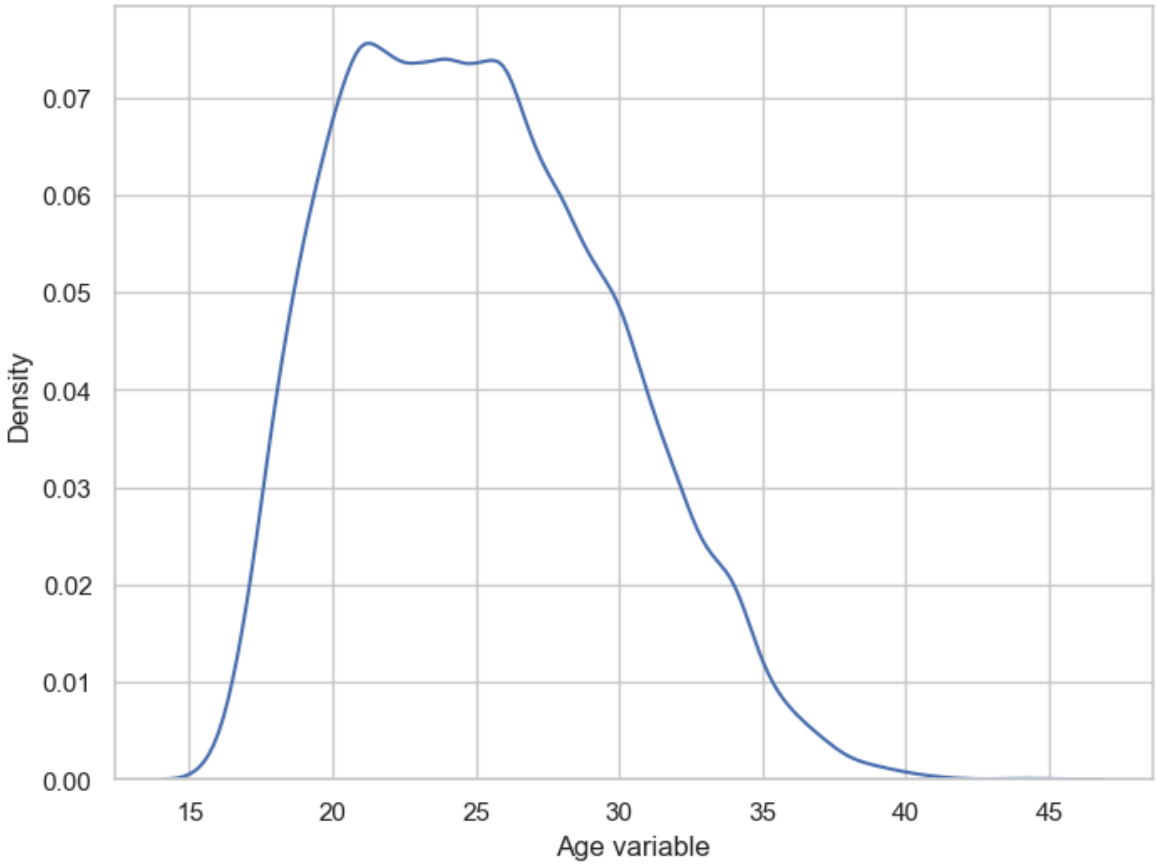
In [9]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
x = pd.Series(x, name="Age variable")
ax = sns.distplot(x, bins=10)
plt.show()
```



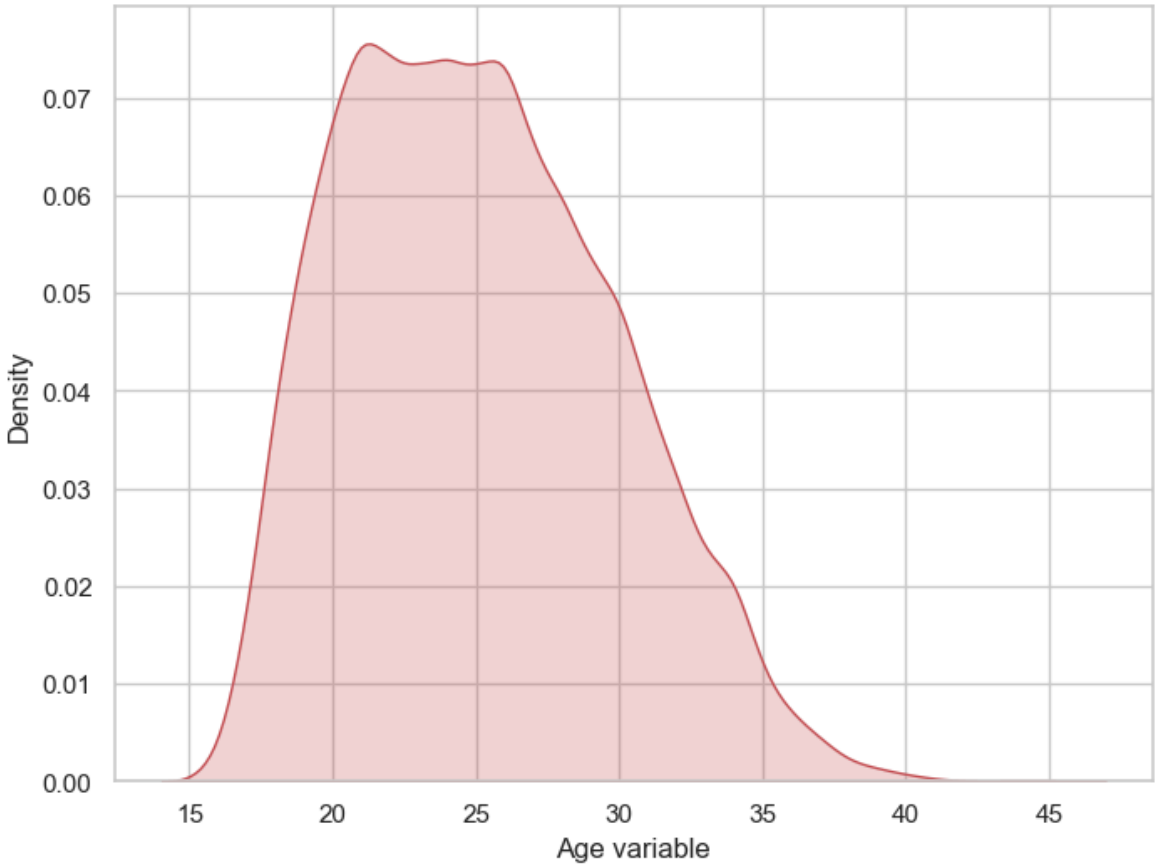
In [10]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
ax = sns.distplot(x, bins=10, vertical = True)
plt.show()
```



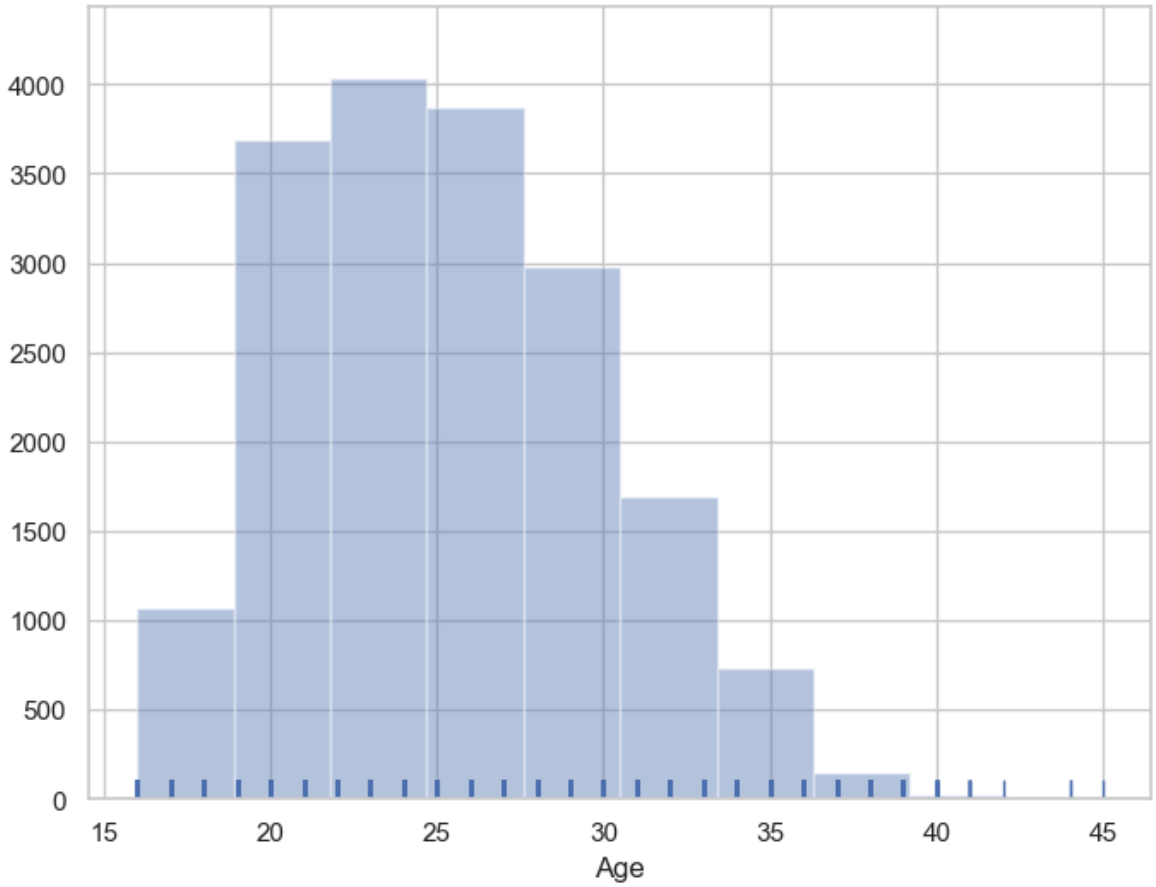
In [11]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
x = pd.Series(x, name="Age variable")
ax = sns.kdeplot(x)
plt.show()
```



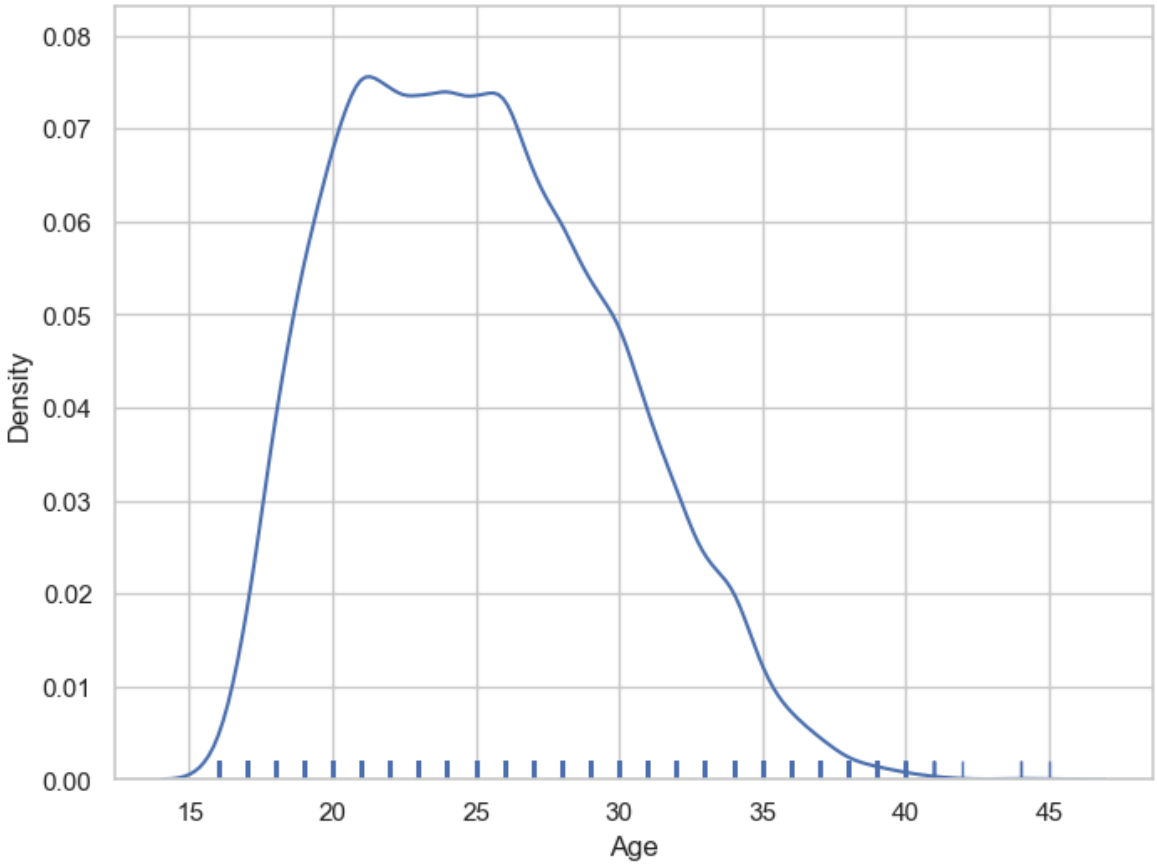
In [12]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
x = pd.Series(x, name="Age variable")
ax = sns.kdeplot(x, shade=True, color='r')
plt.show()
```



In [13]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
ax = sns.distplot(x, kde=False, rug=True, bins=10)
plt.show()
```



In [14]:
```
f, ax = plt.subplots(figsize=(8,6))
x = fifa['Age']
ax = sns.distplot(x, hist=False, rug=True, bins=10)
plt.show()
```



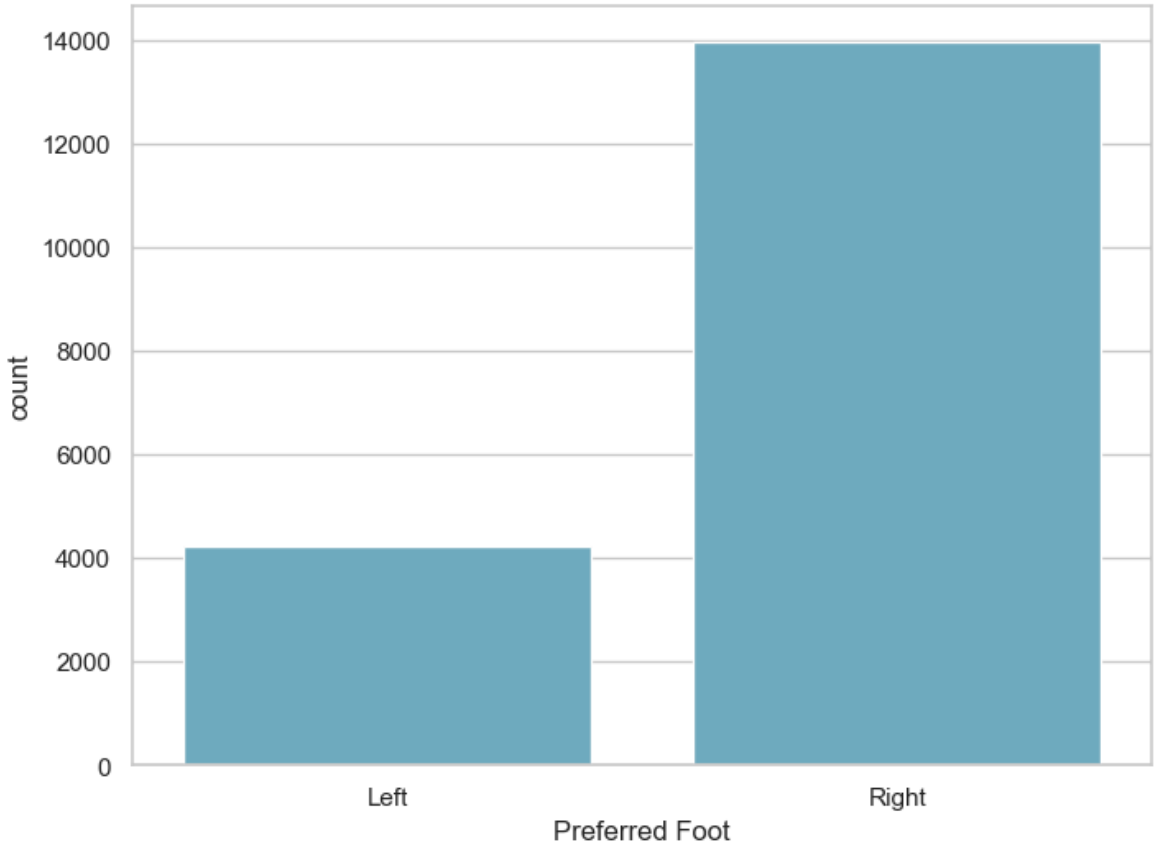
In [15]:
```
fifa['Preferred Foot'].nunique()
```

Out[15]:
```
2
```

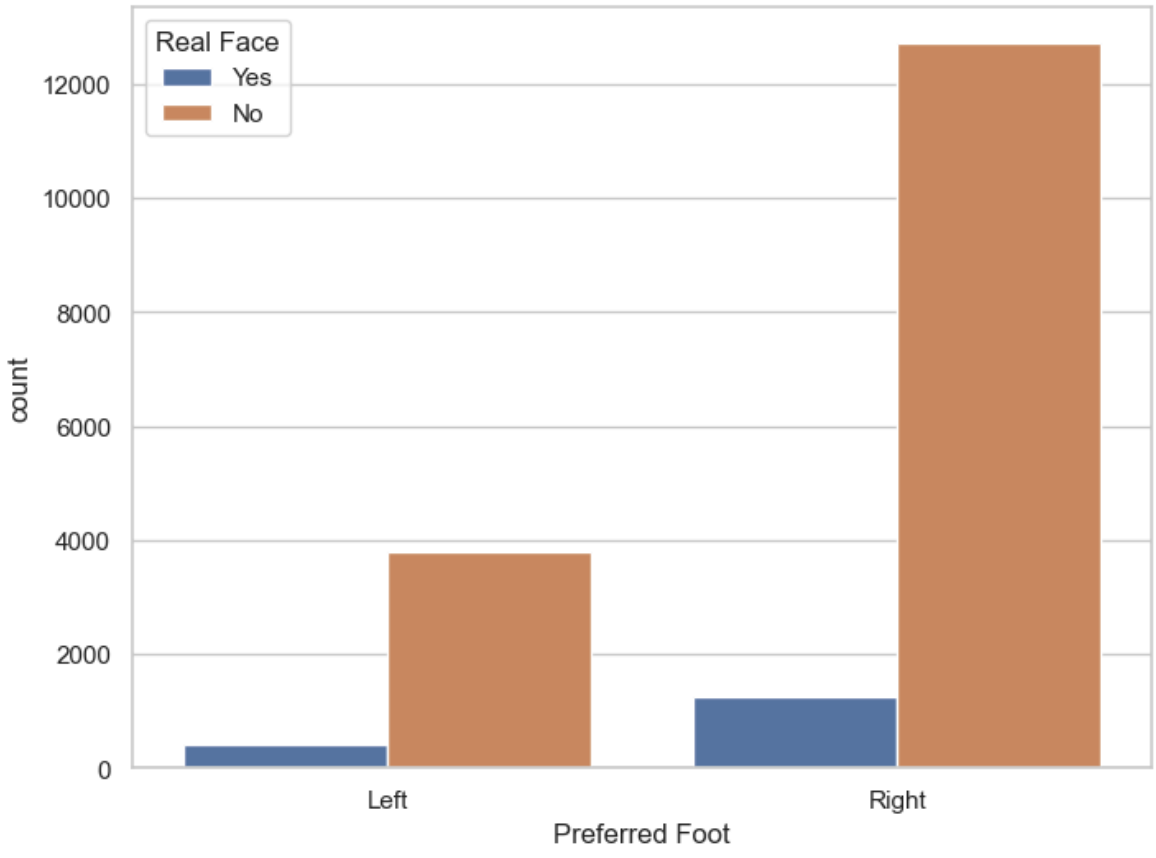
In [16]:
```
fifa['Preferred Foot'].value_counts()
```

Out[16]:
```
Preferred Foot
Right    13948
Left      4211
Name: count, dtype: int64
```

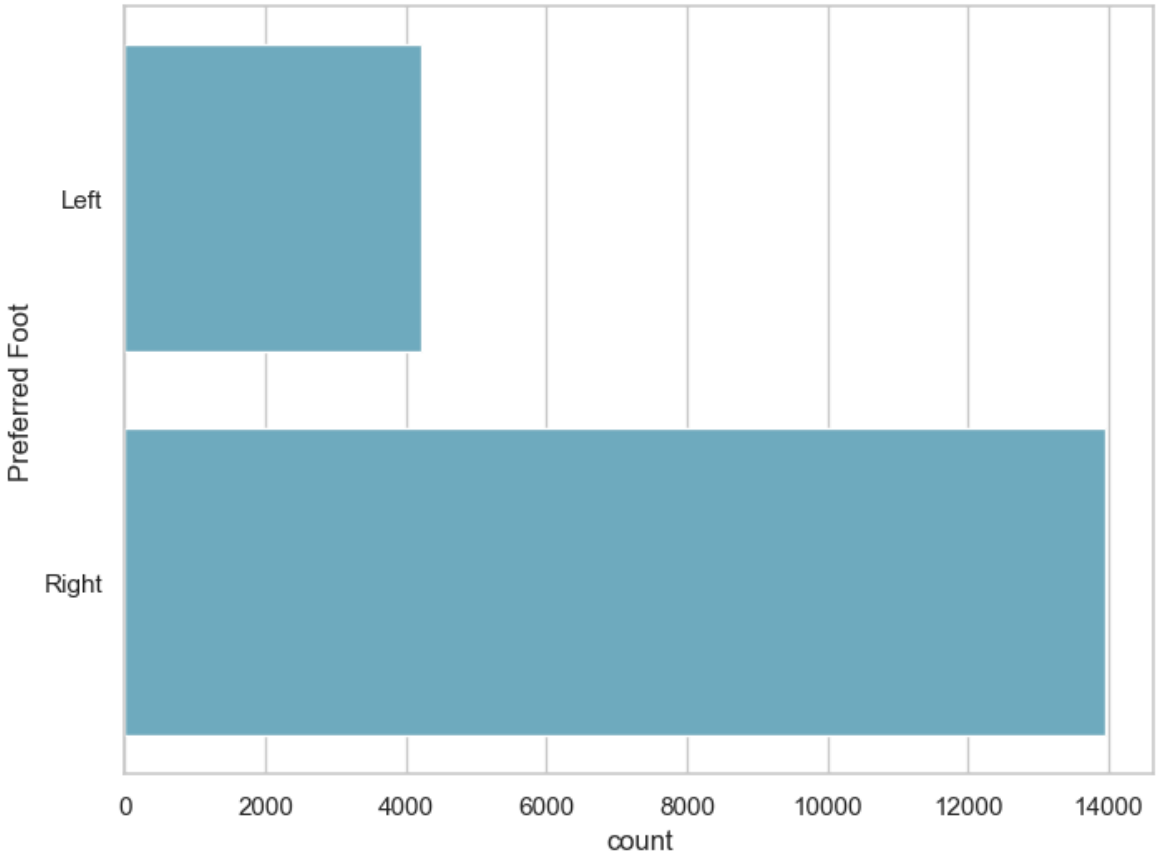
In [17]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.countplot(x="Preferred Foot", data=fifa, color="c")
plt.show()
```



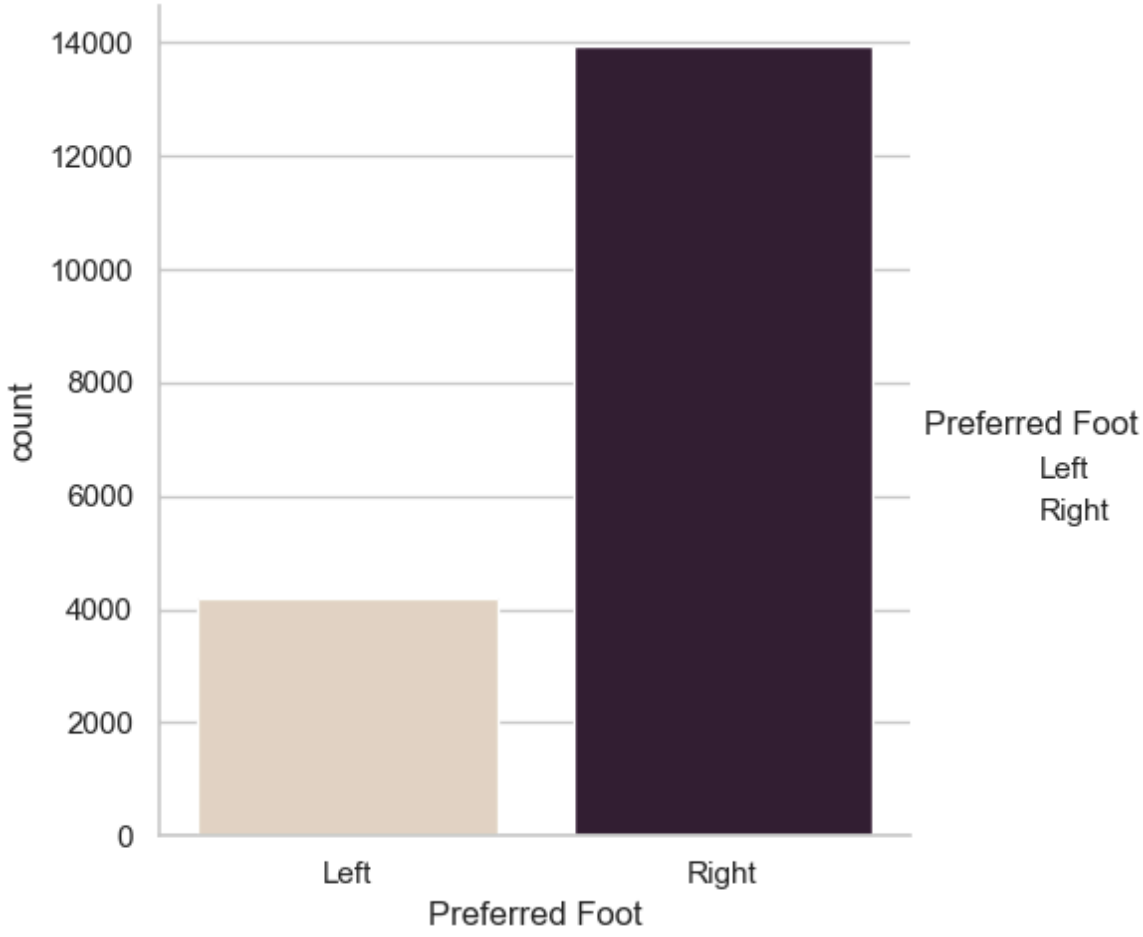
In [18]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.countplot(x="Preferred Foot", hue="Real Face", data=fifa)
plt.show()
```



In [19]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.countplot(y="Preferred Foot", data=fifa, color="c")
plt.show()
```



In [20]:
```
g = sns.catplot(x="Preferred Foot", kind="count", palette="ch:.25", data=fifa)
plt.show()
```



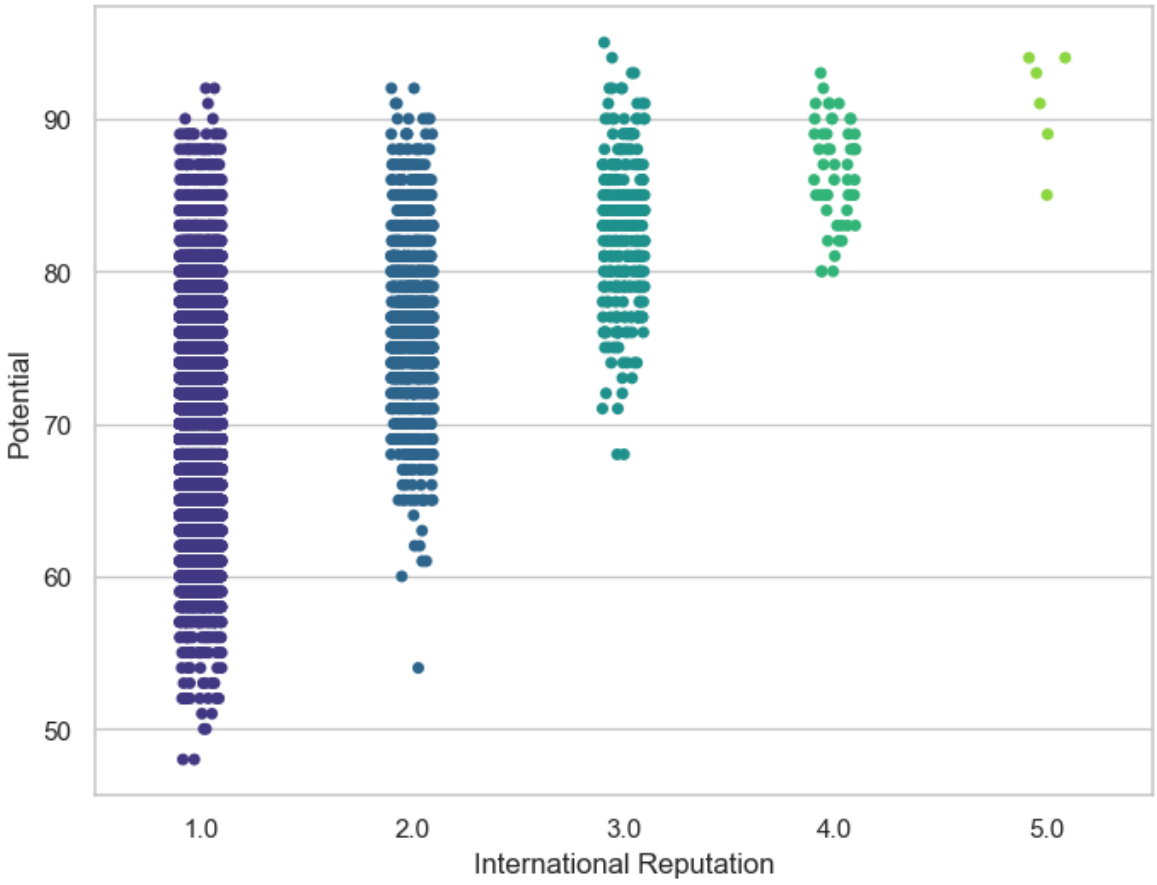
In [21]:
```
fifa['International Reputation'].nunique()
```

Out[21]:
```
5
```

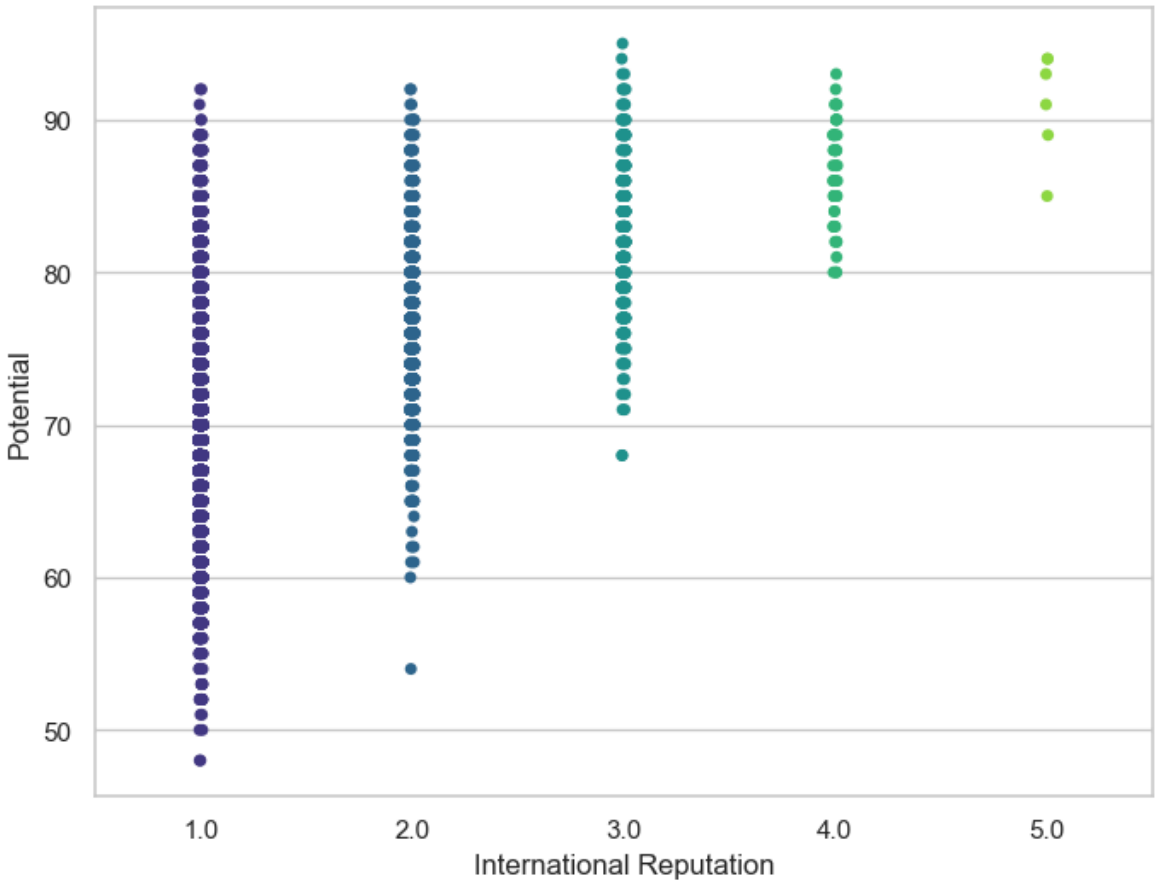
In [22]:
```
fifa['International Reputation'].value_counts()
```

Out[22]:
```
International Reputation
1.0    16532
2.0     1261
3.0      309
4.0       51
5.0        6
Name: count, dtype: int64
```

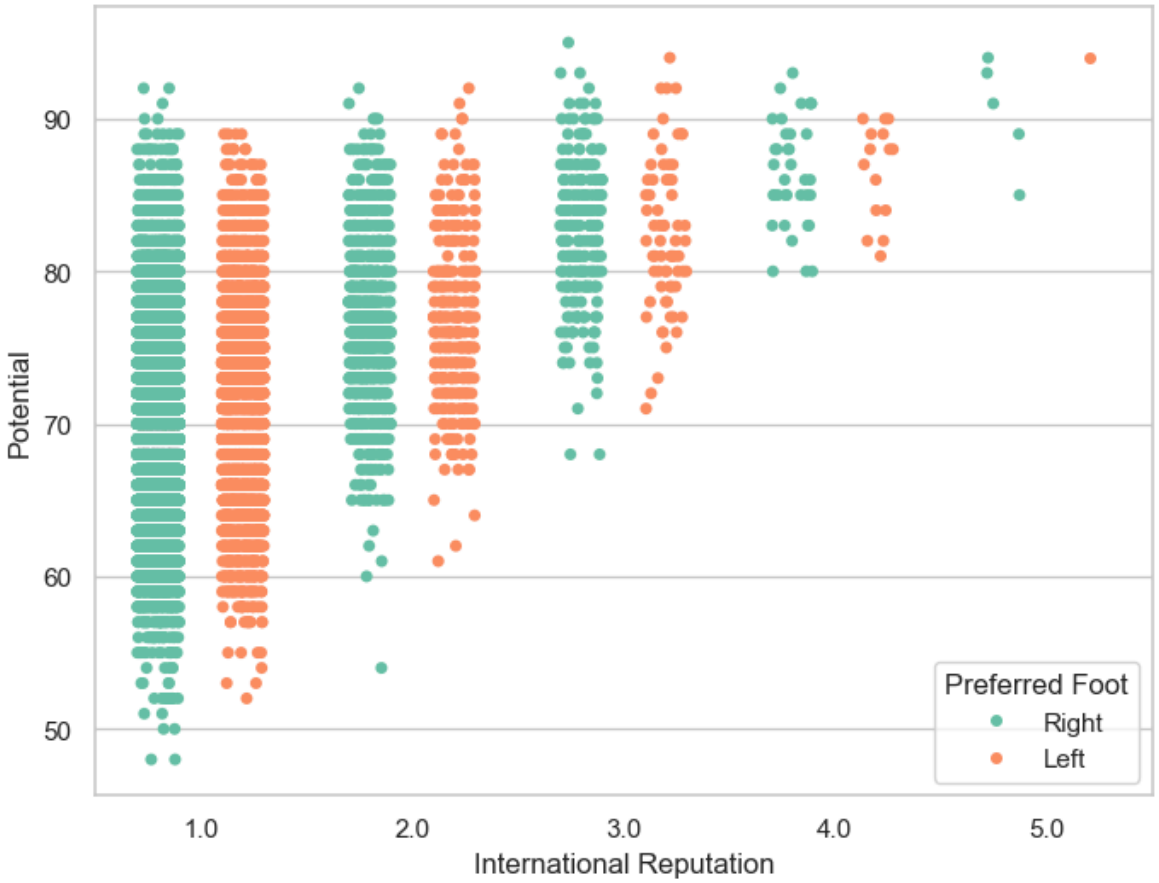
In [23]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", palette="viridis", da
plt.show()
```



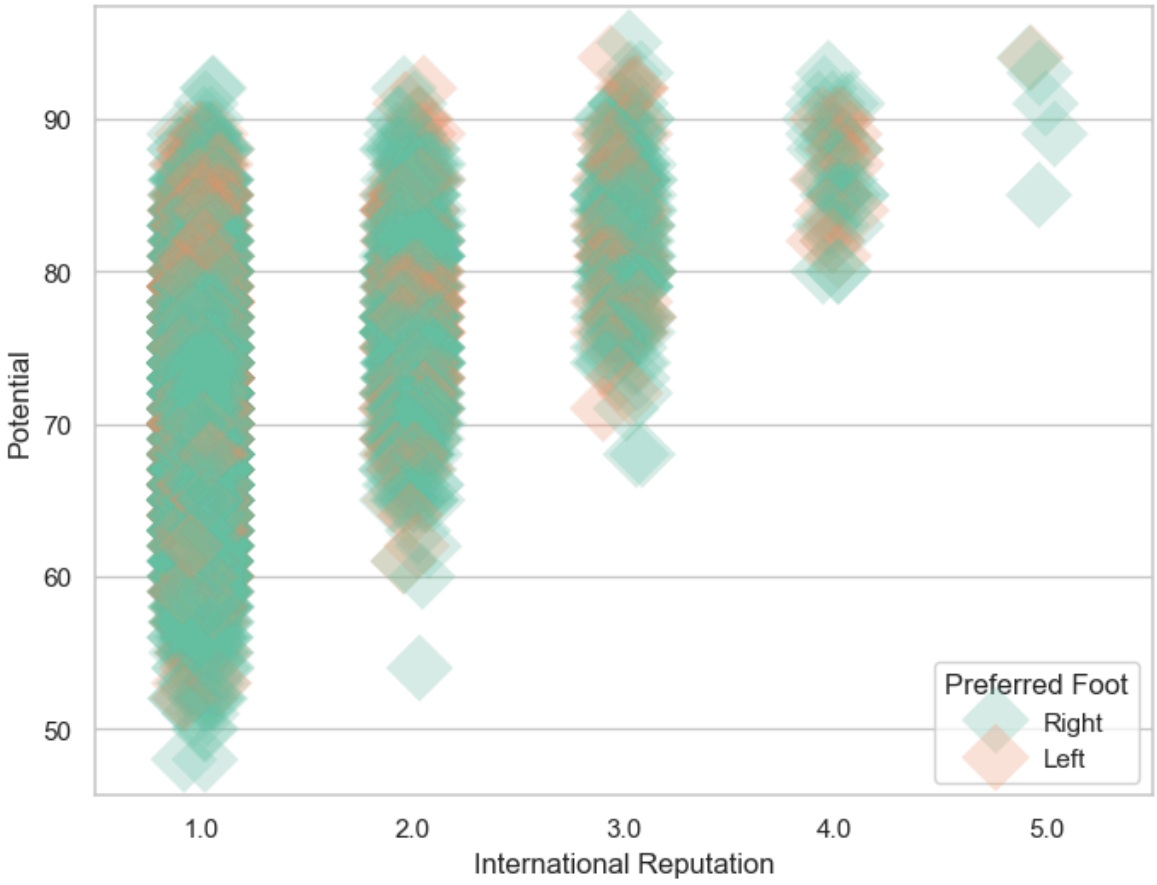
In [24]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", palette="viridis",dat
plt.show()
```



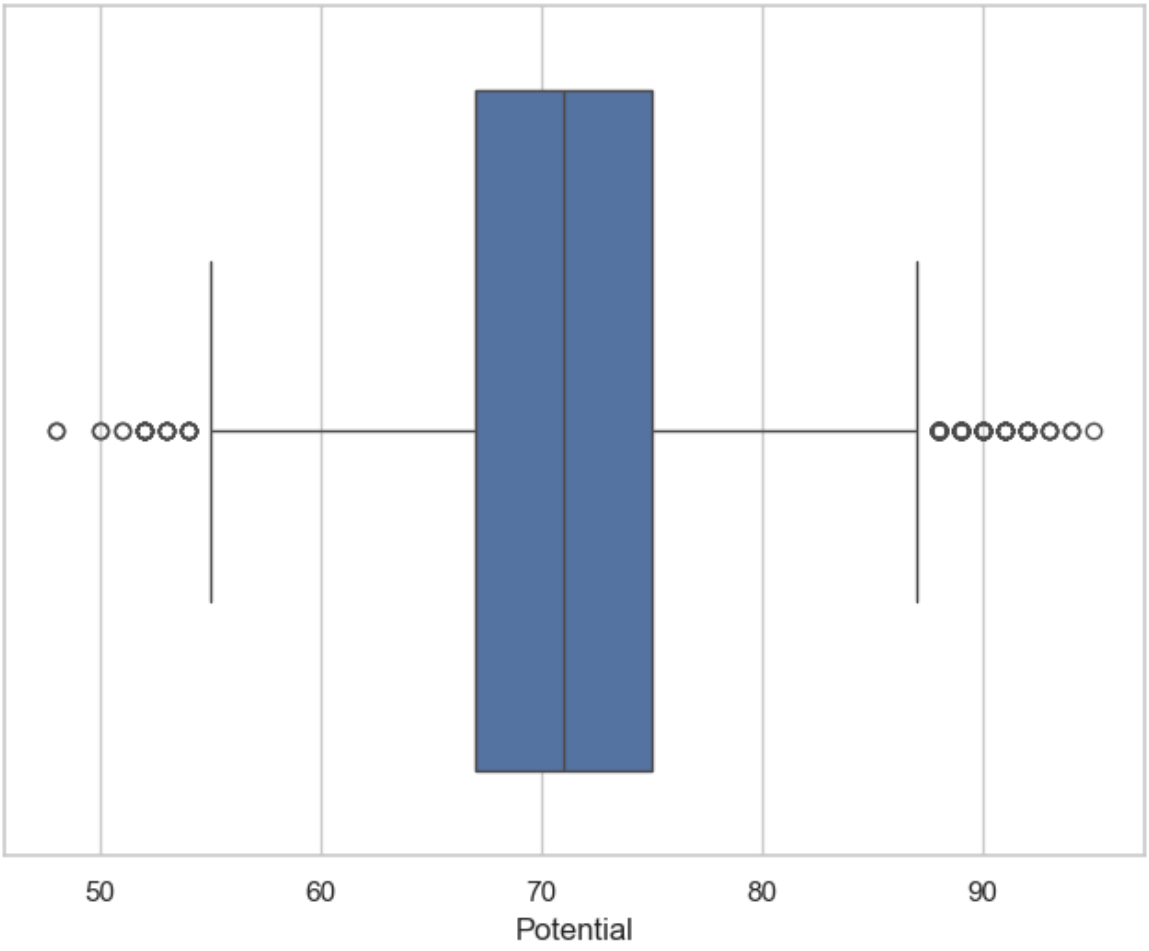
In [25]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", hue="Preferred Foot",
                    data=fifa, jitter=0.2, palette="Set2", dodge=True)
plt.show()
```



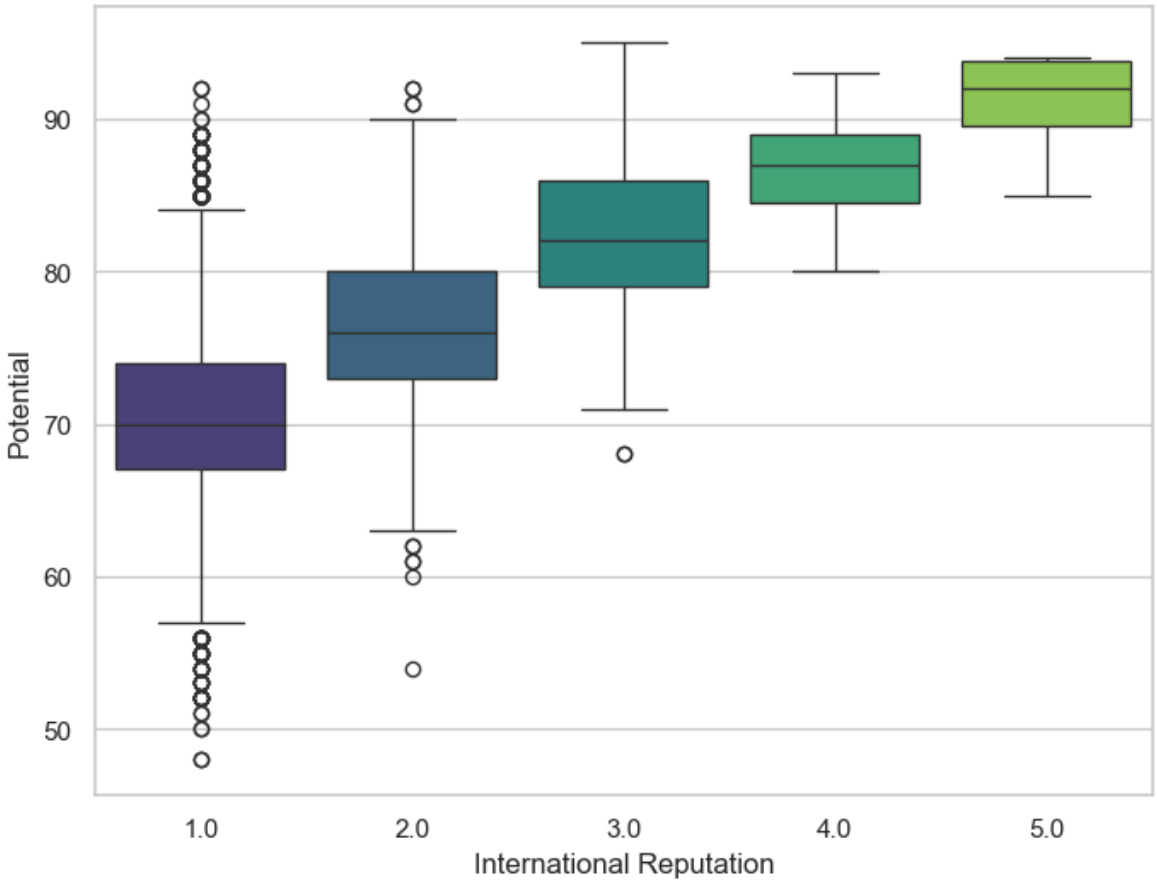
In [26]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", hue="Preferred Foot",
                    data=fifa, palette="Set2", size=20, marker="D",
                    edgecolor="gray", alpha=.25)
plt.show()
```



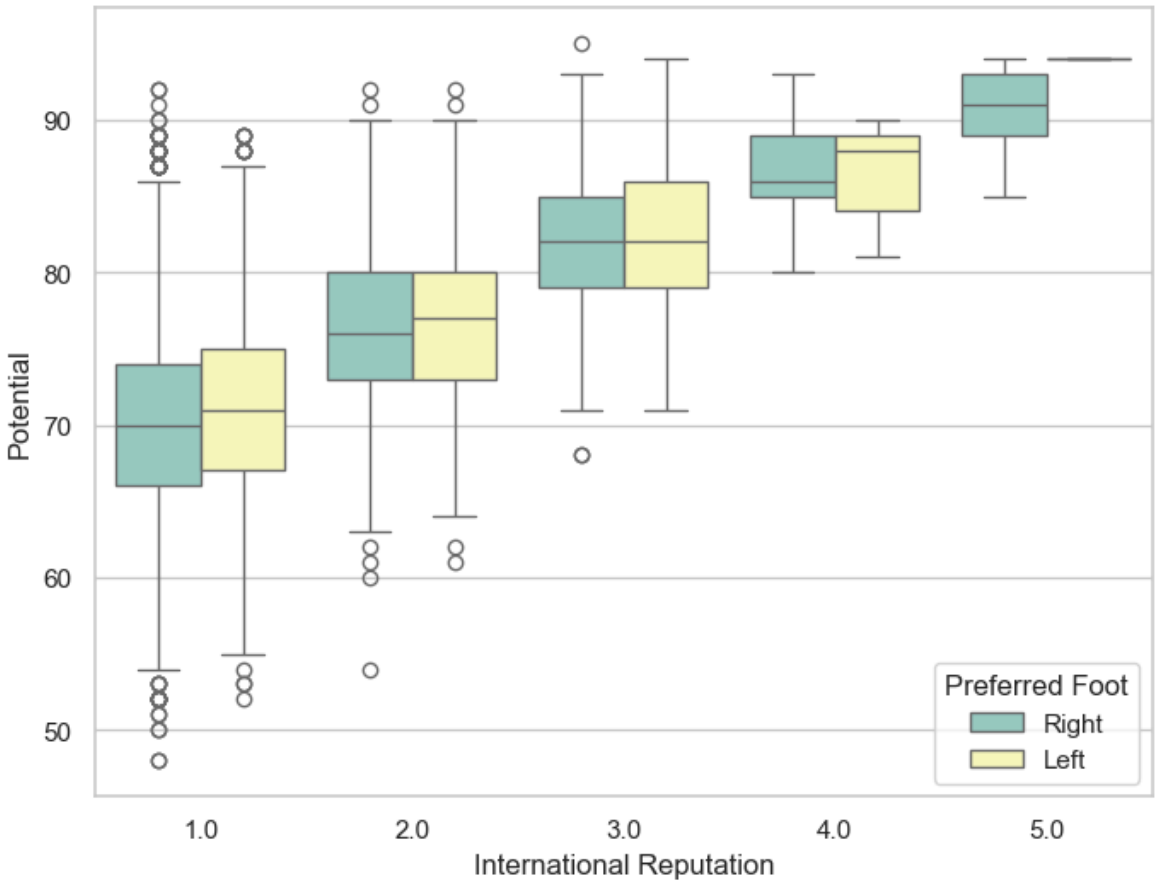
In [27]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x=fifa["Potential"])
plt.show()
```



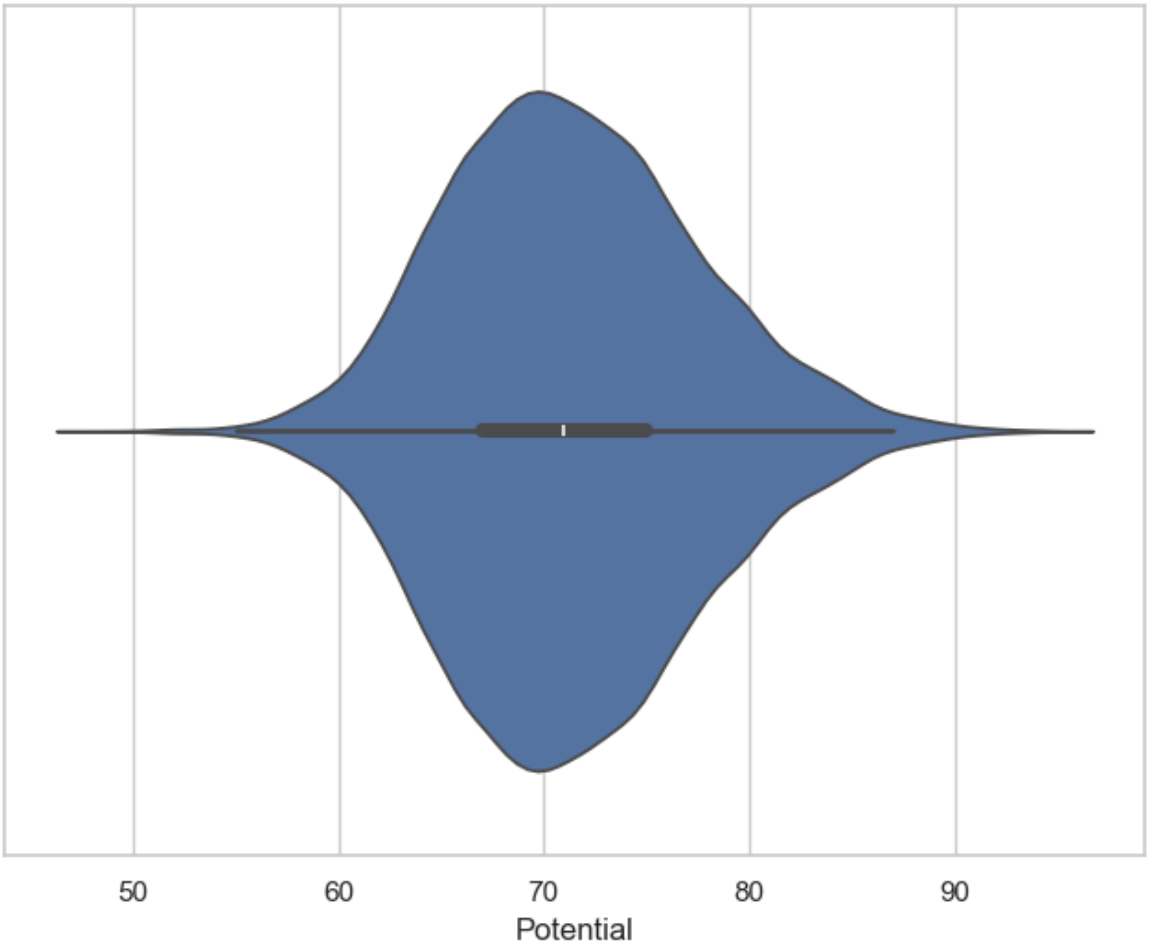
In [28]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x="International Reputation", y="Potential",palette="viridis",data=f
plt.show()
```



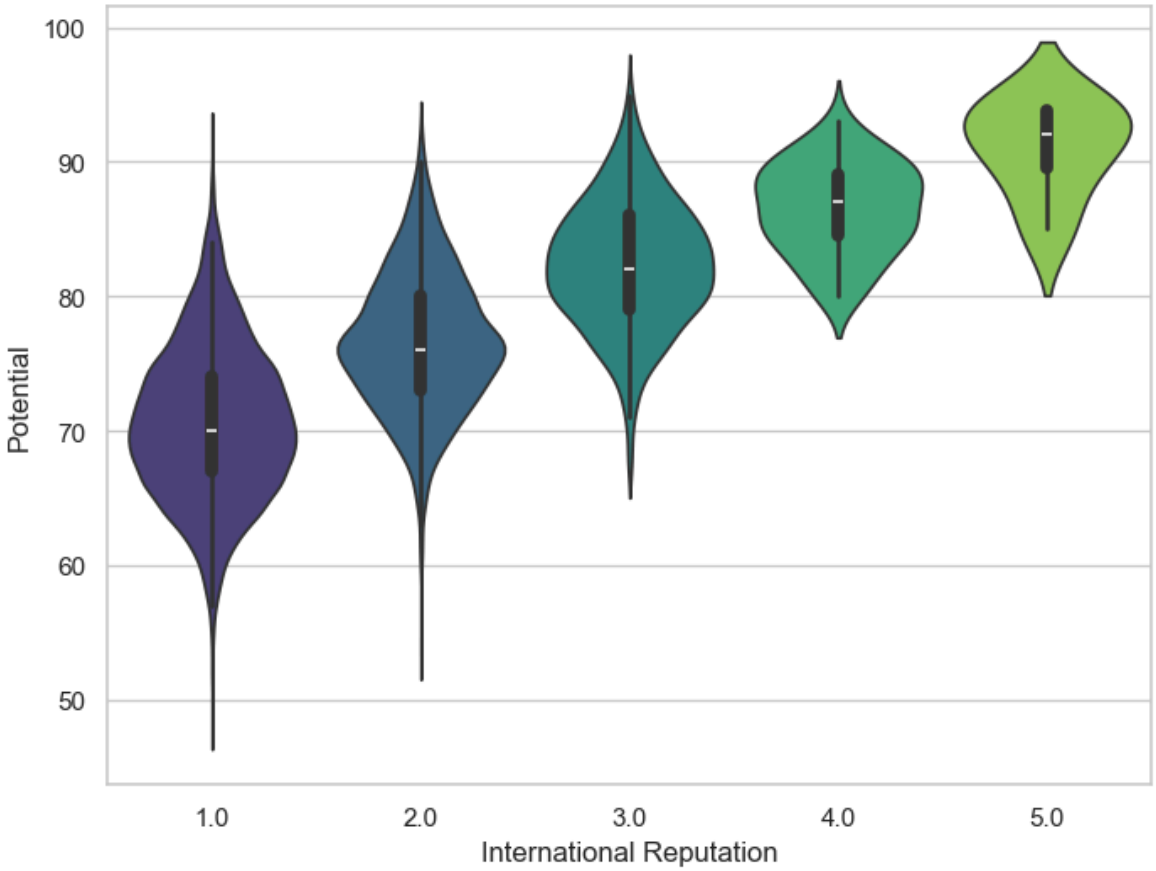
In [29]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x="International Reputation", y="Potential", hue="Preferred Foot", d
plt.show()
```



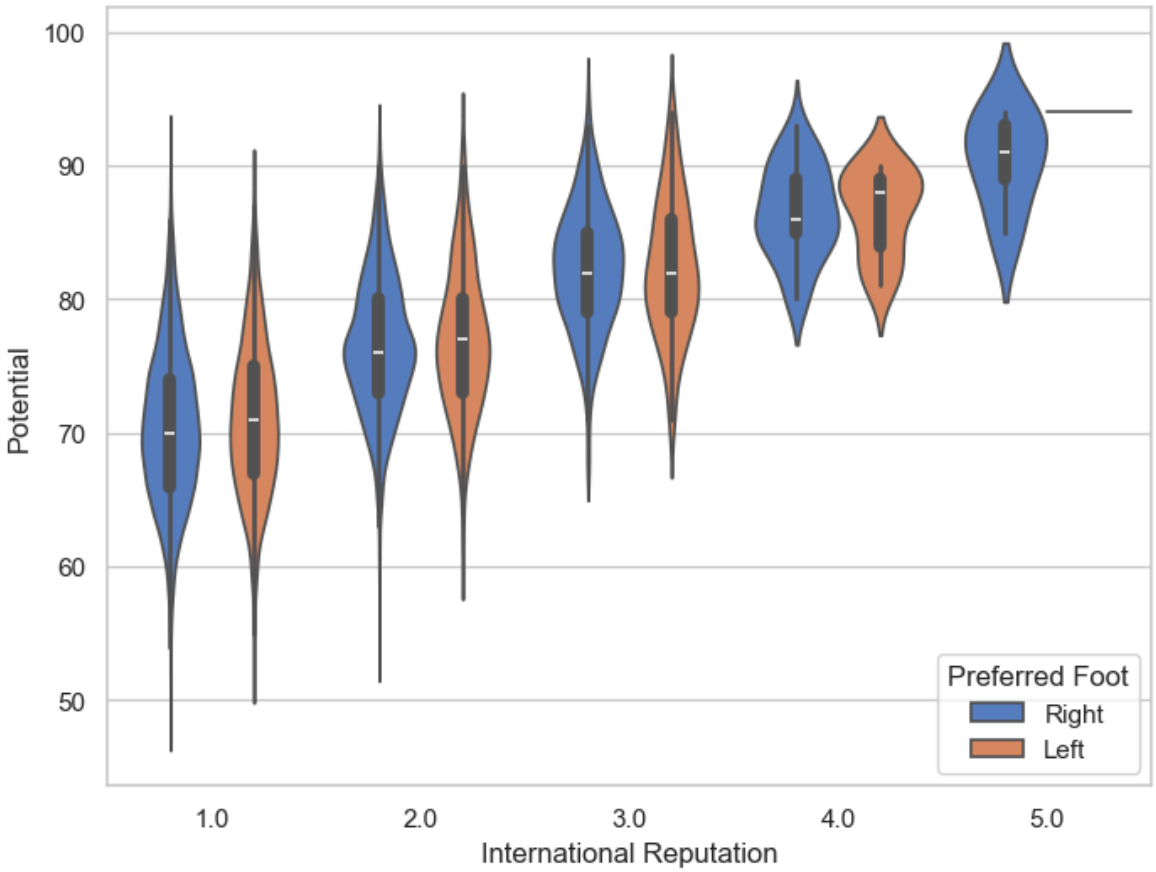
In [30]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x=fifa["Potential"])
plt.show()
```



In [31]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential",palette="viridis", da
plt.show()
```

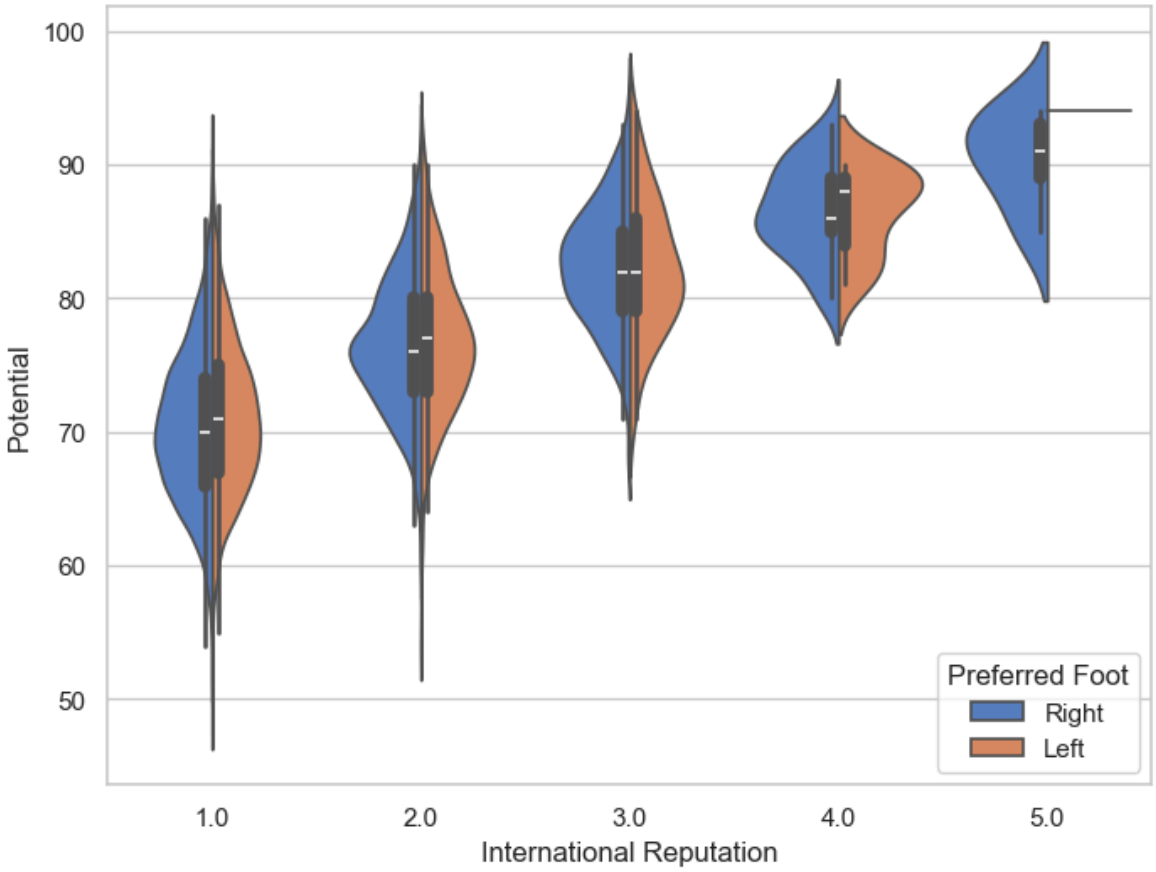


In [32]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential", hue="Preferred Foot"
plt.show()
```

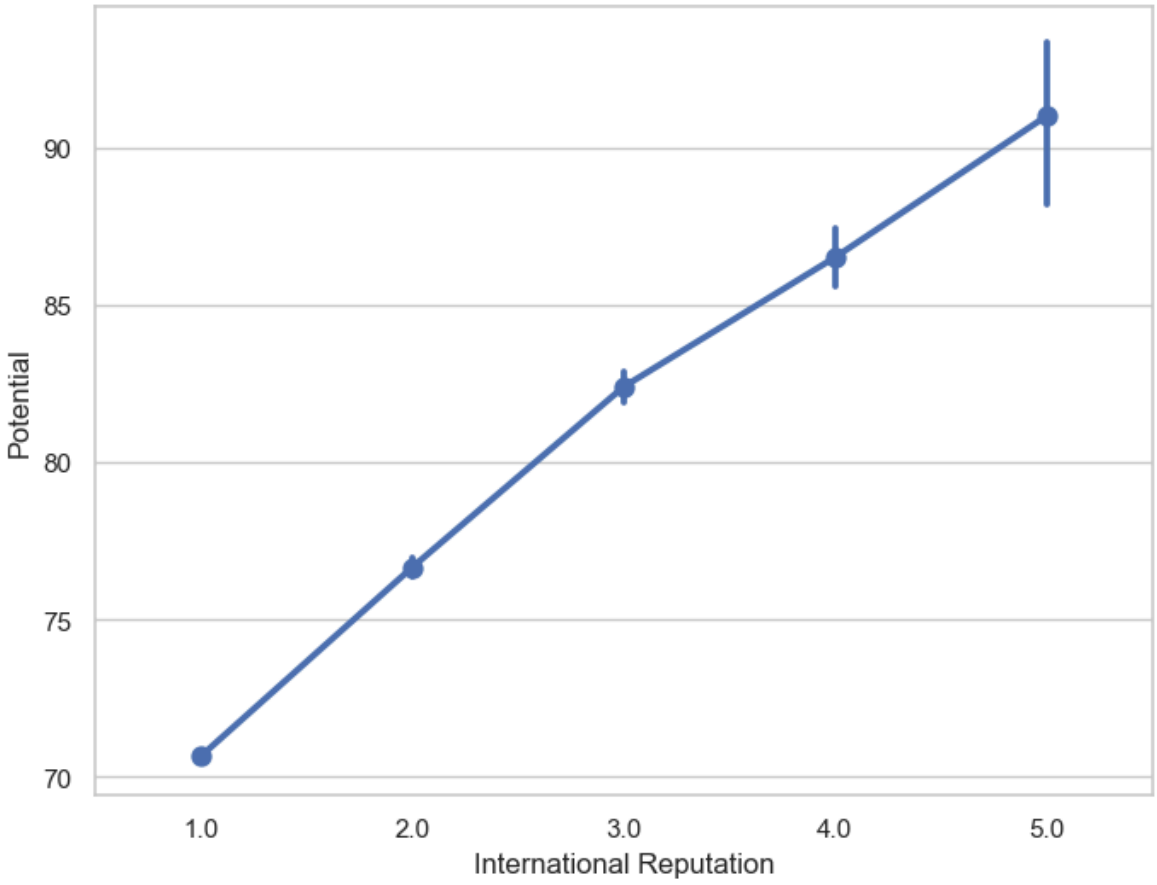


In [33]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential", hue="Preferred Foot"
```

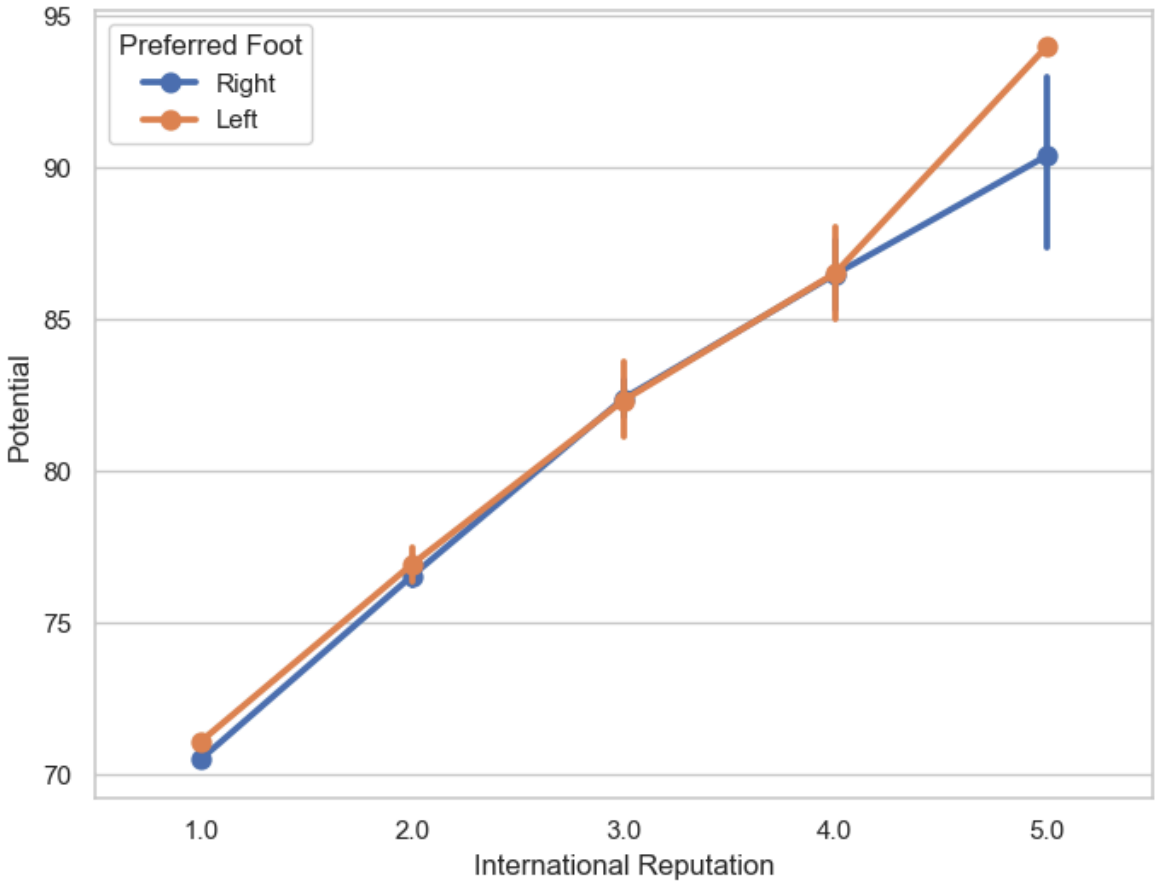
```
                data=fifa, palette="muted", split=True)
plt.show()
```



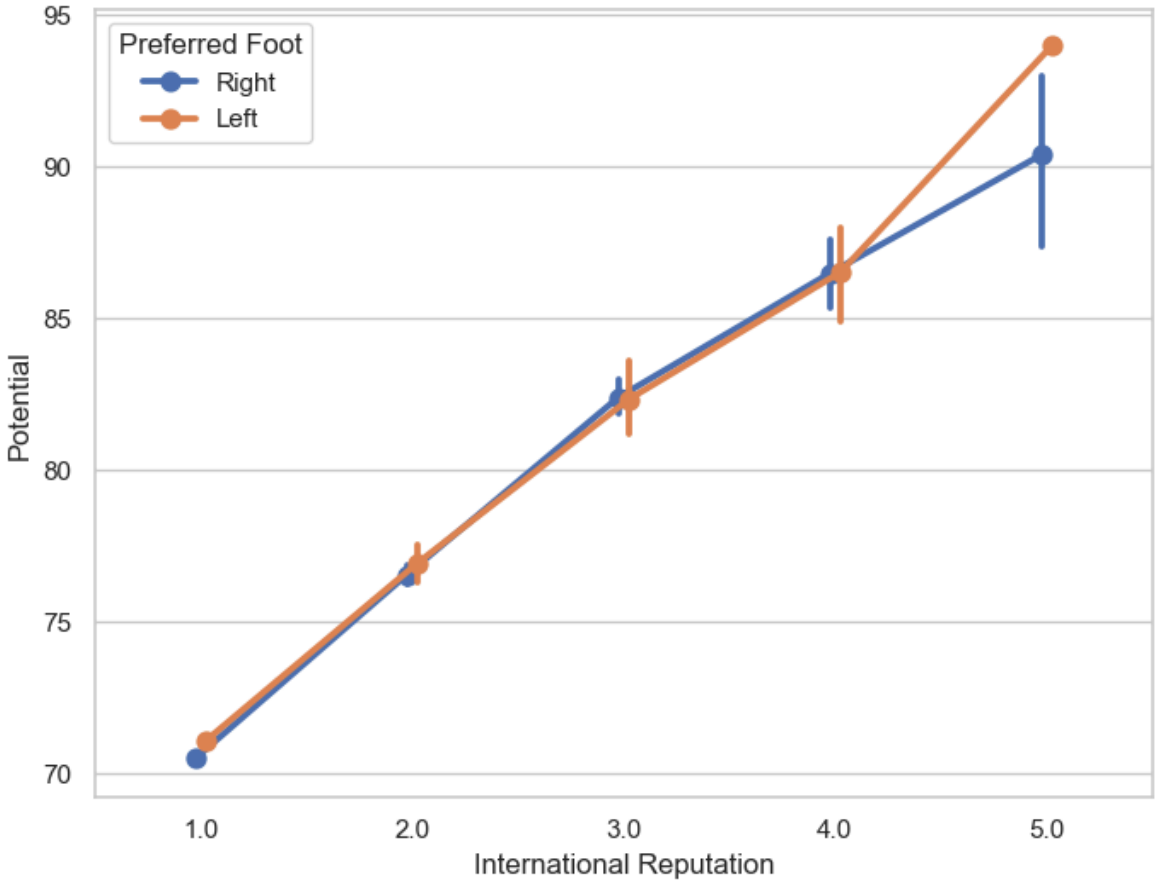
In [34]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", data=fifa)
plt.show()
```



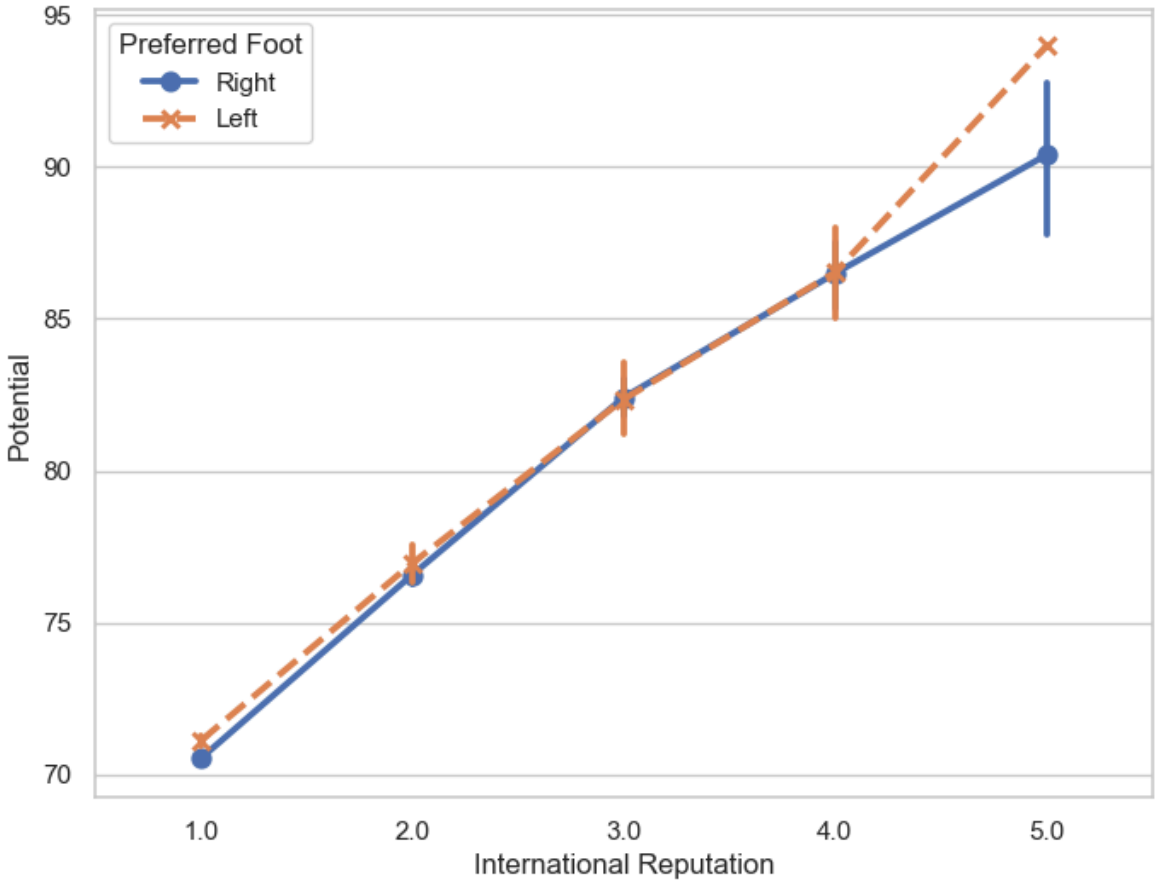
In [35]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot",
plt.show()
```



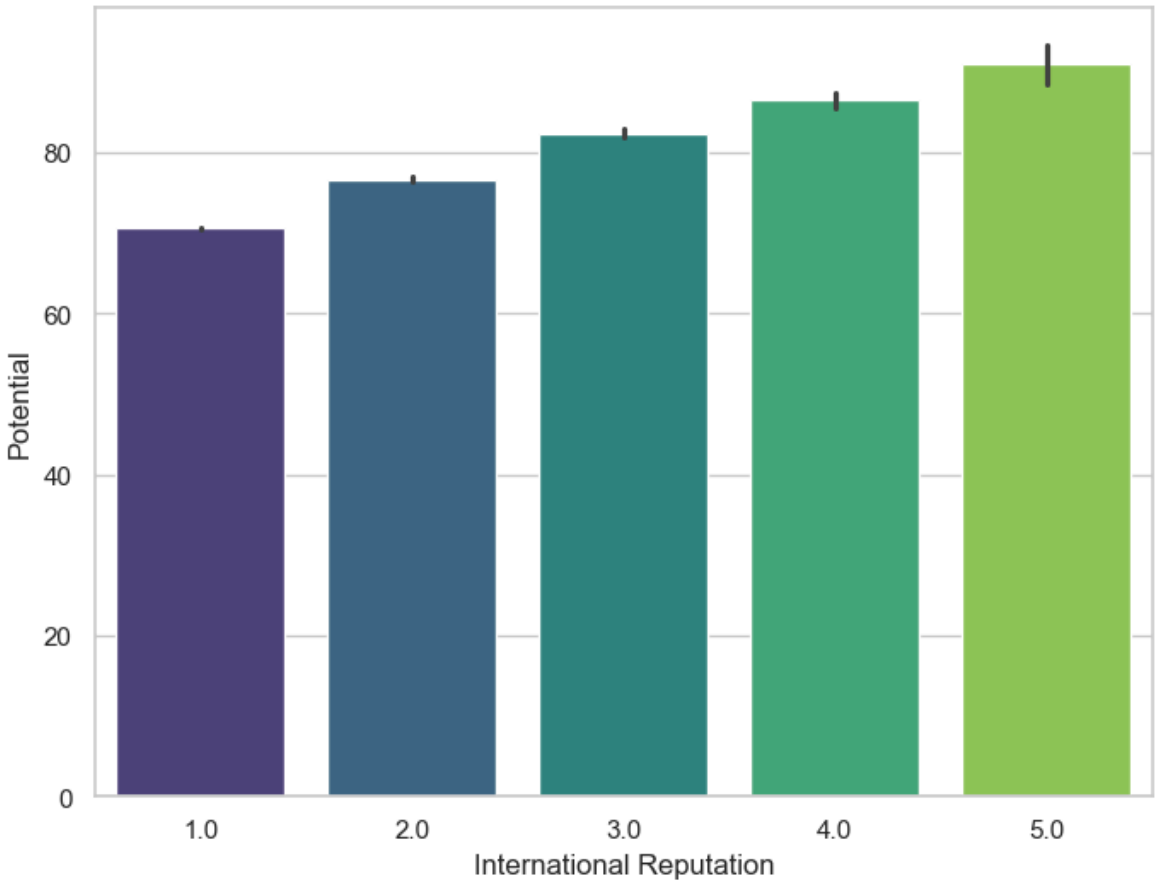
In [36]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot",
plt.show()
```



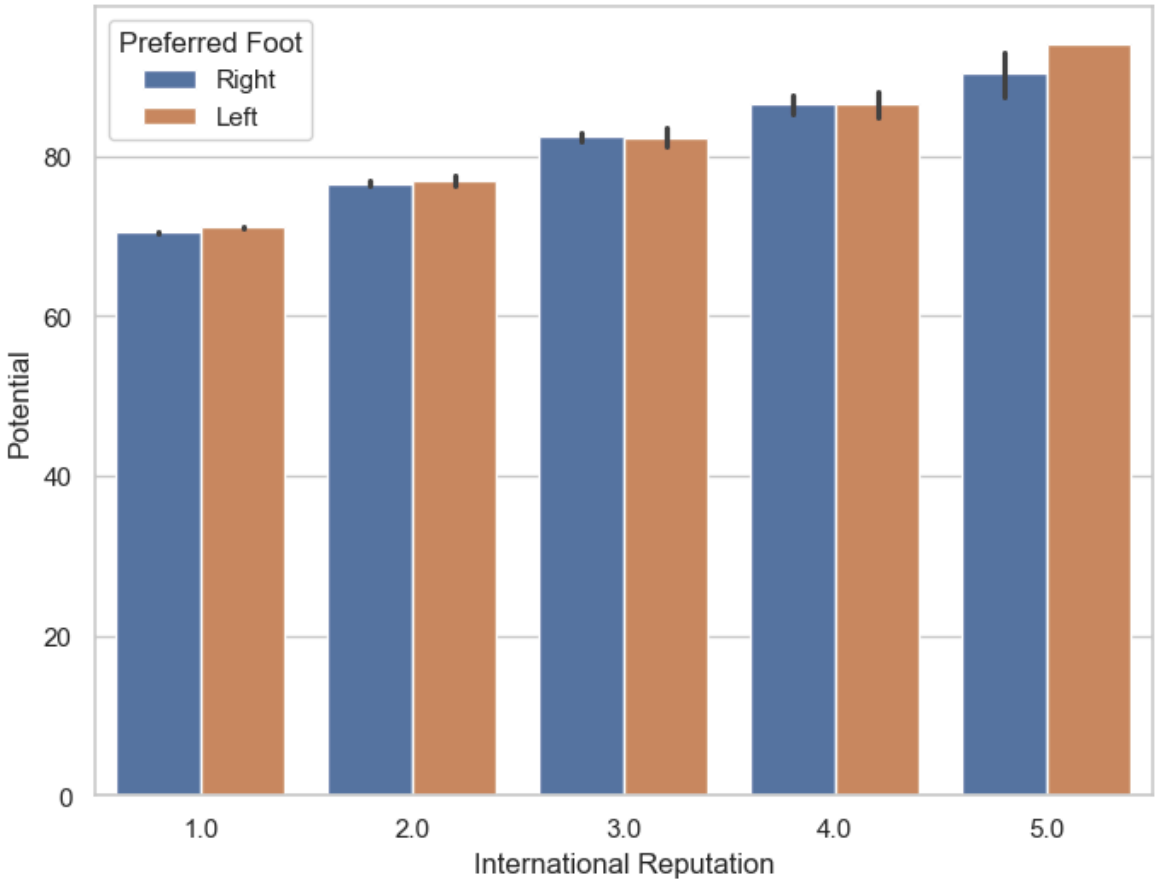
In [37]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot",
              data=fifa, markers=["o", "x"], linestyles=["-", "--"])
plt.show()
```



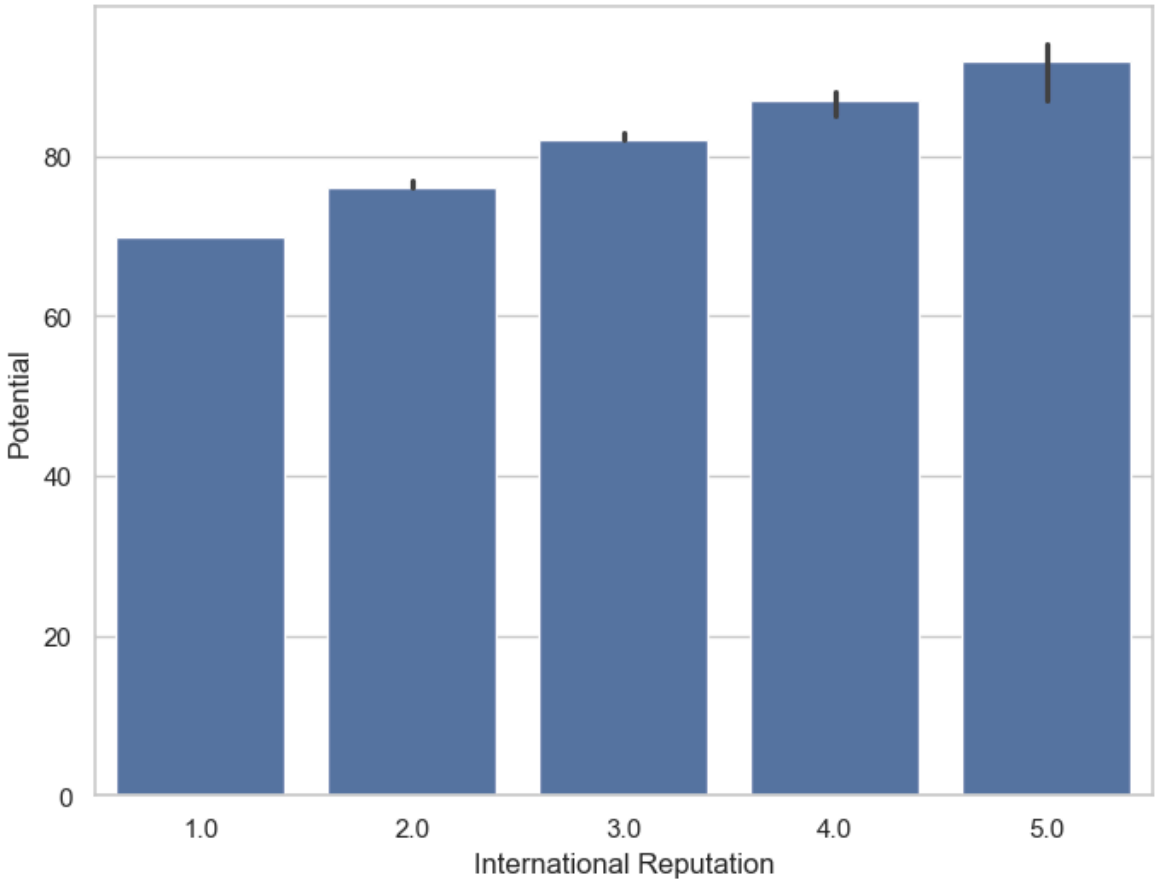
In [38]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", palette="viridis",  dat
plt.show()
```



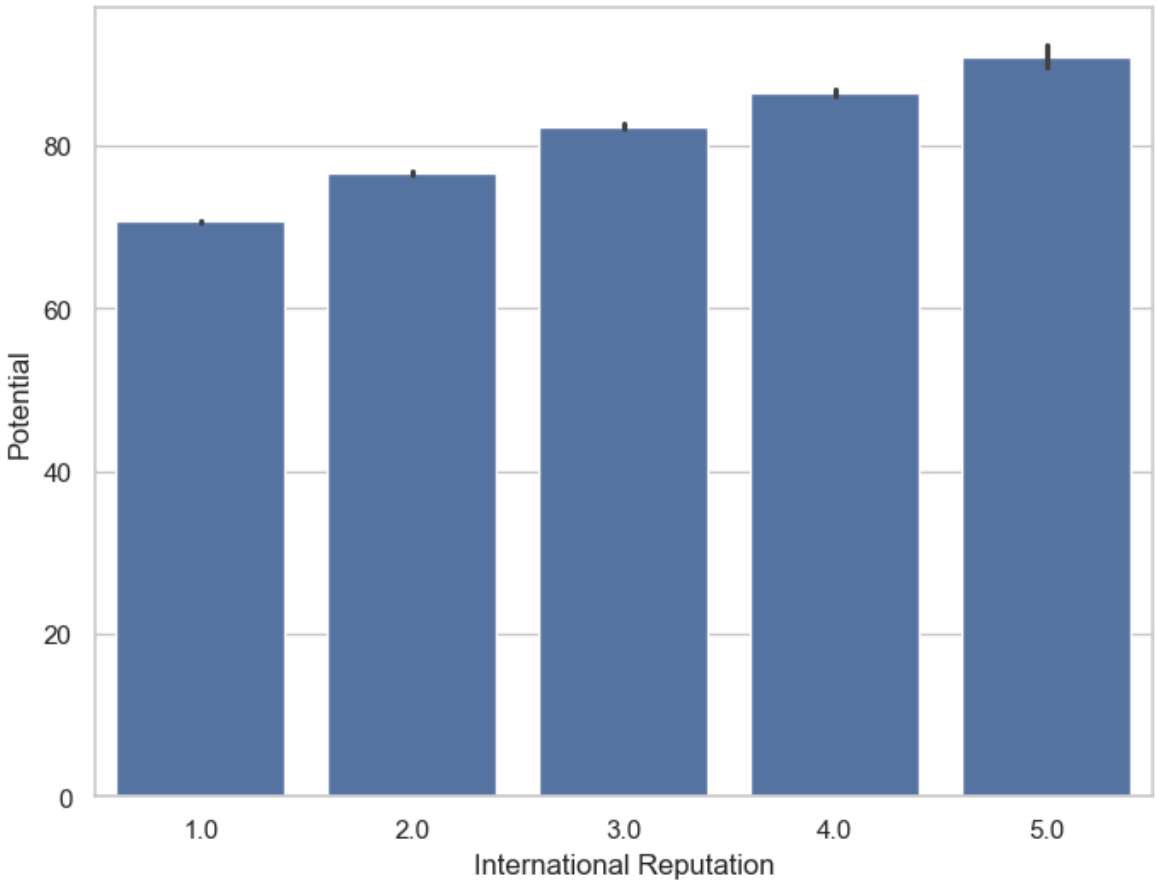
In [39]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", hue="Preferred Foot", d
plt.show()
```



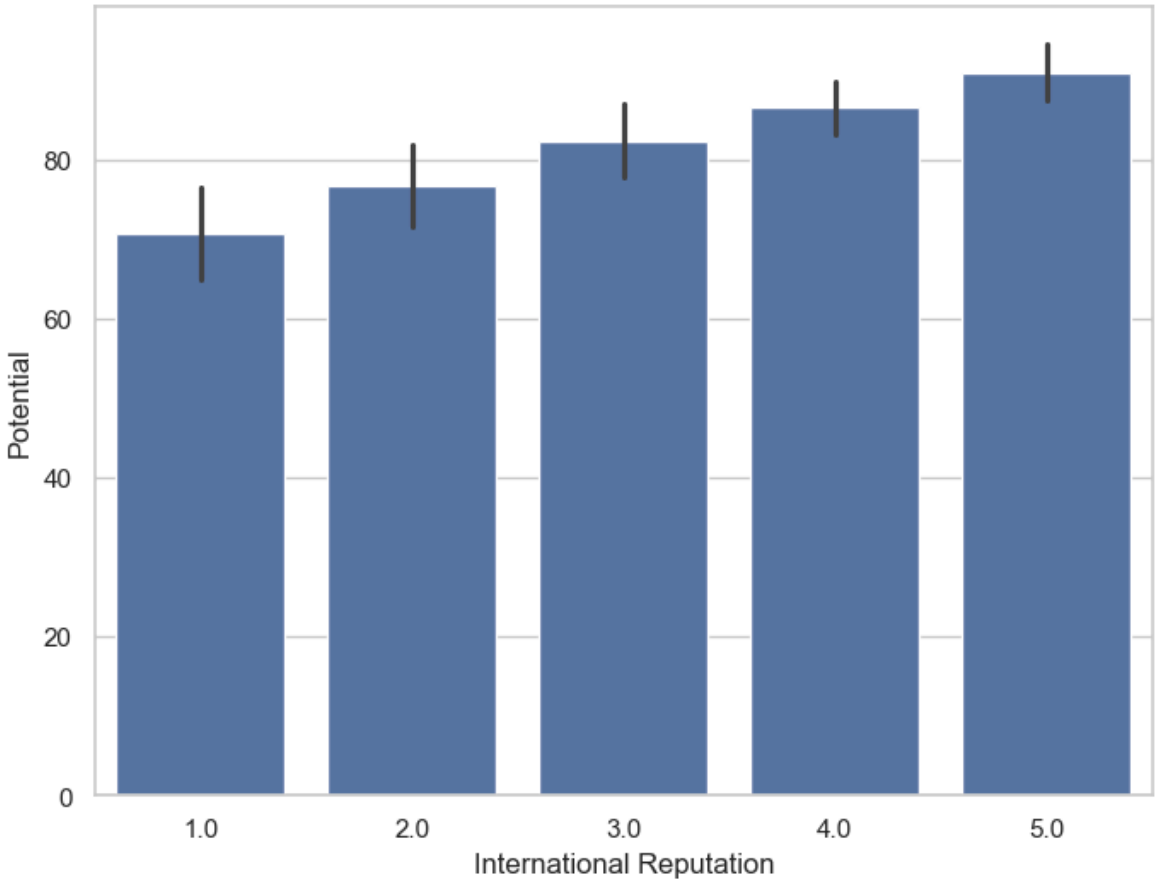
In [40]:
```
from numpy import median
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa, estimator=me
plt.show()
```



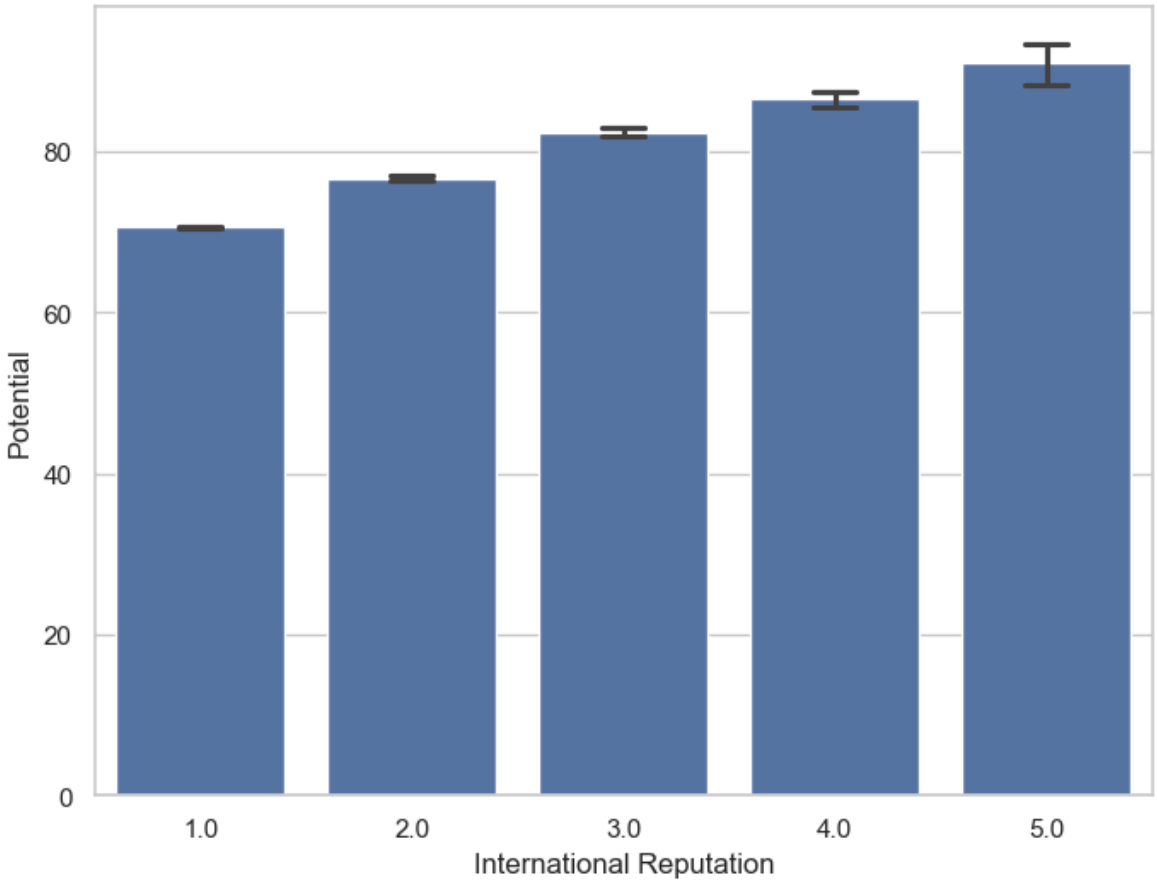
In [41]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa, ci=68)
plt.show()
```



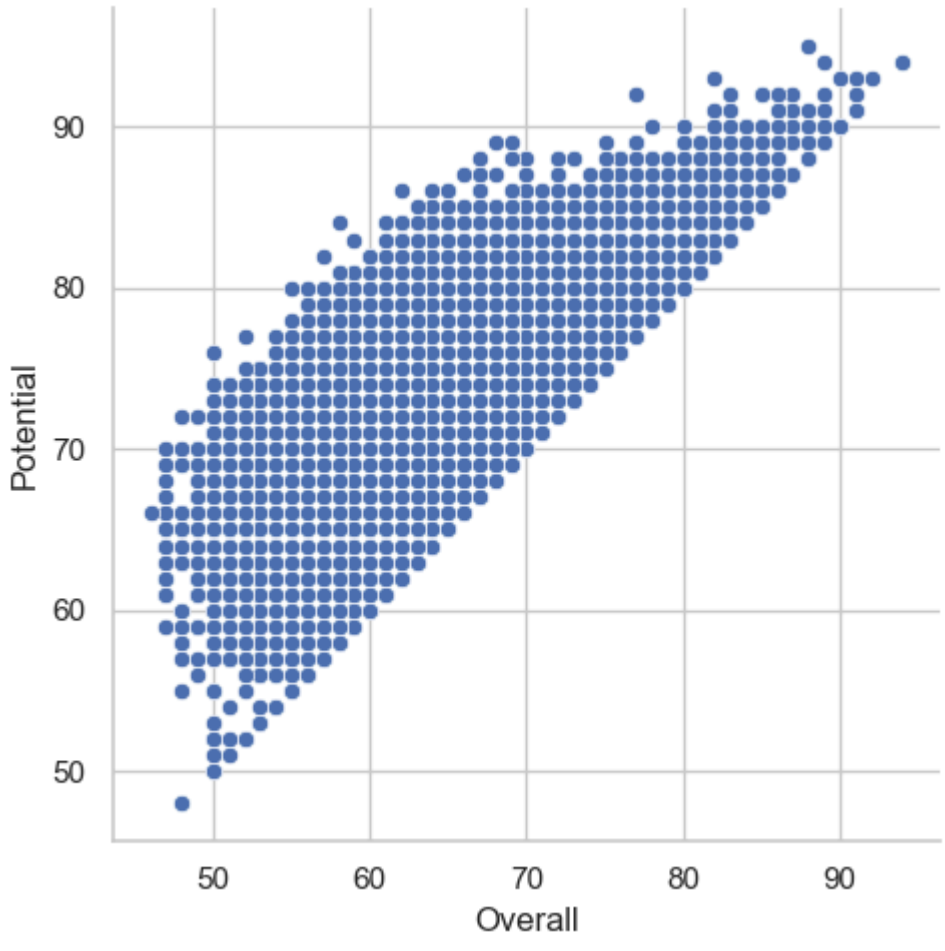
In [42]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa, ci="sd")
plt.show()
```



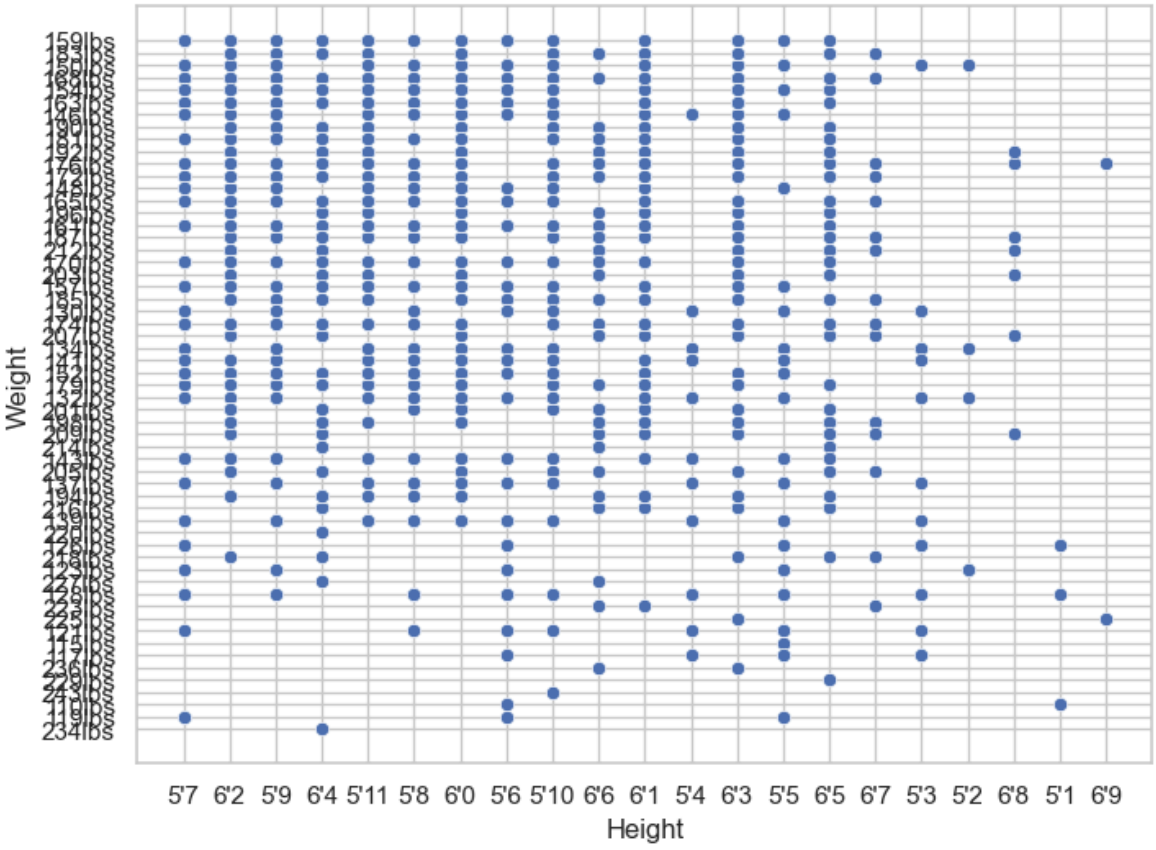
In [43]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa, capsize=0.2)
plt.show()
```



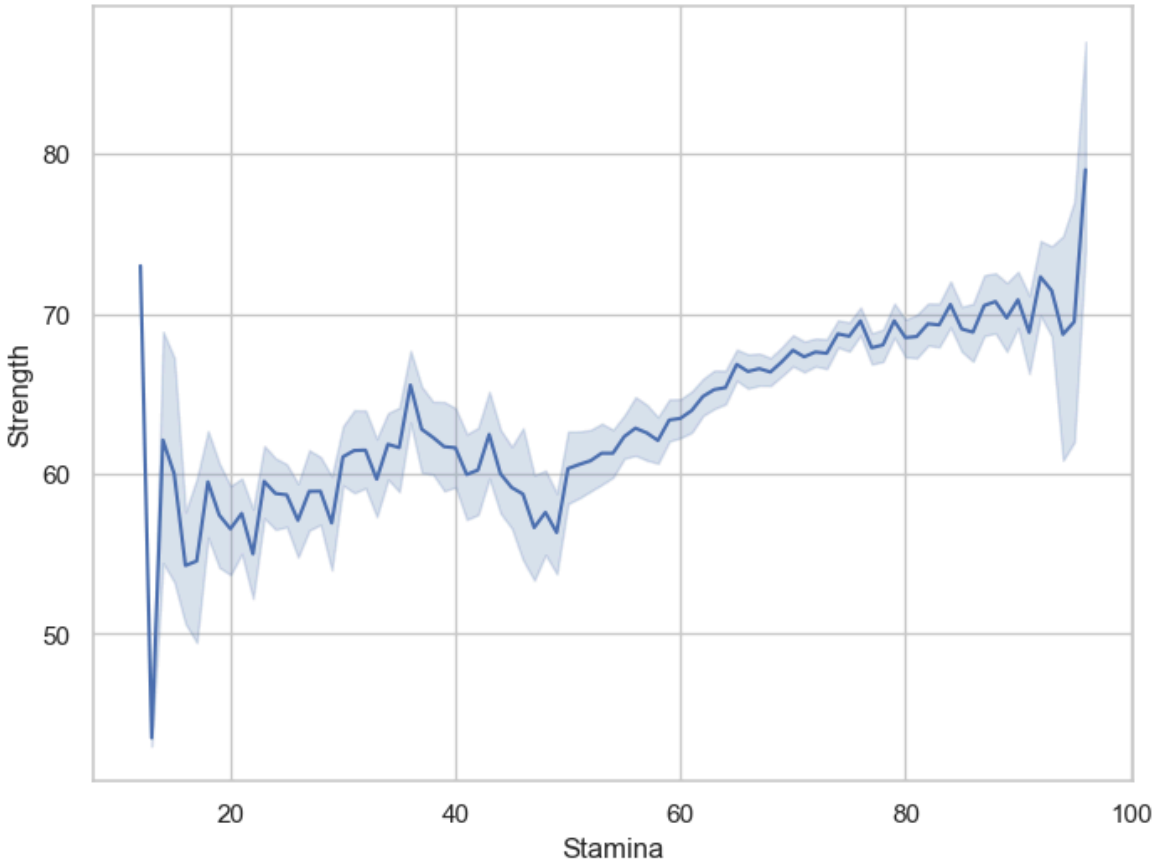
In [44]:
```
g = sns.relplot(x="Overall", y="Potential", data=fifa)
plt.show()
```



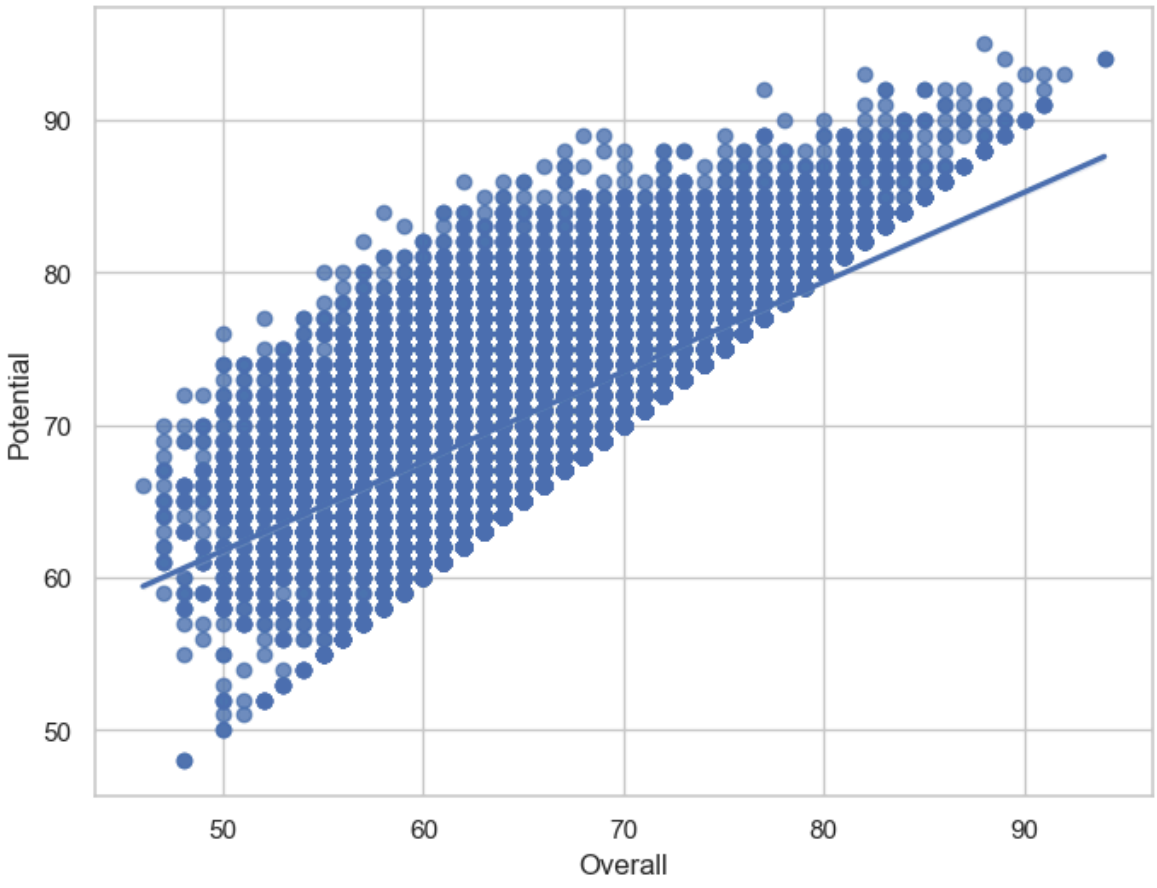
In [45]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.scatterplot(x="Height", y="Weight", data=fifa)
plt.show()
```



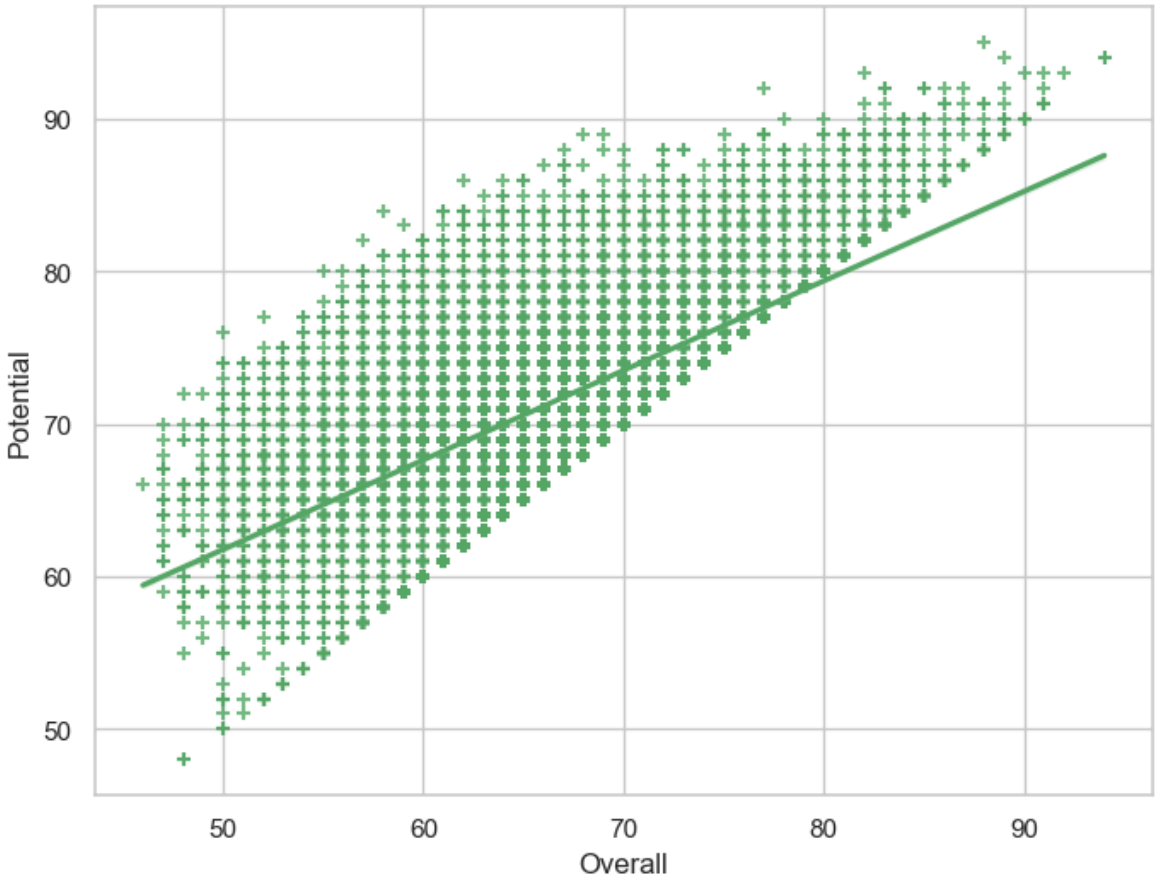
In [46]:
```
f, ax = plt.subplots(figsize=(8, 6))
ax = sns.lineplot(x="Stamina", y="Strength", data=fifa)
plt.show()
```



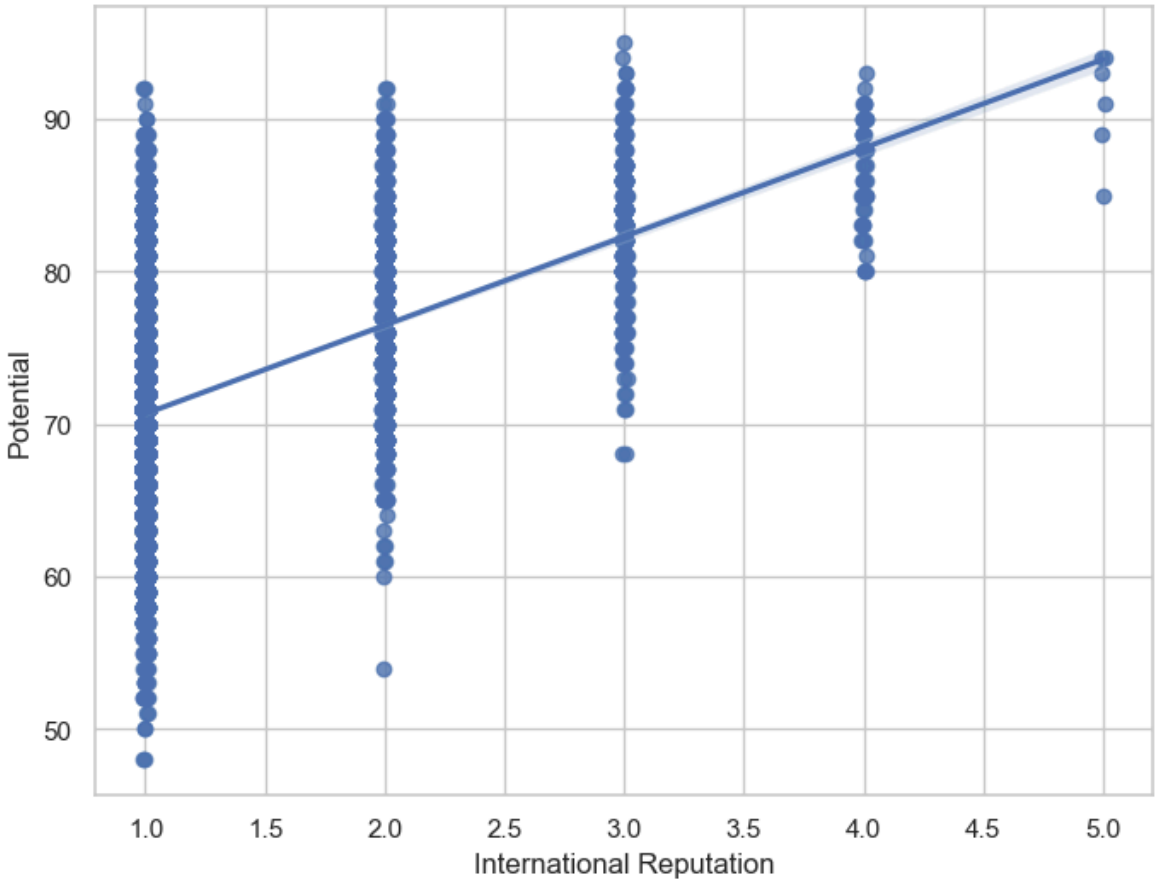
In [47]:
```
f, ax = plt.subplots(figsize=(8, 6))
ax = sns.regplot(x="Overall", y="Potential", data=fifa)
plt.show()
```



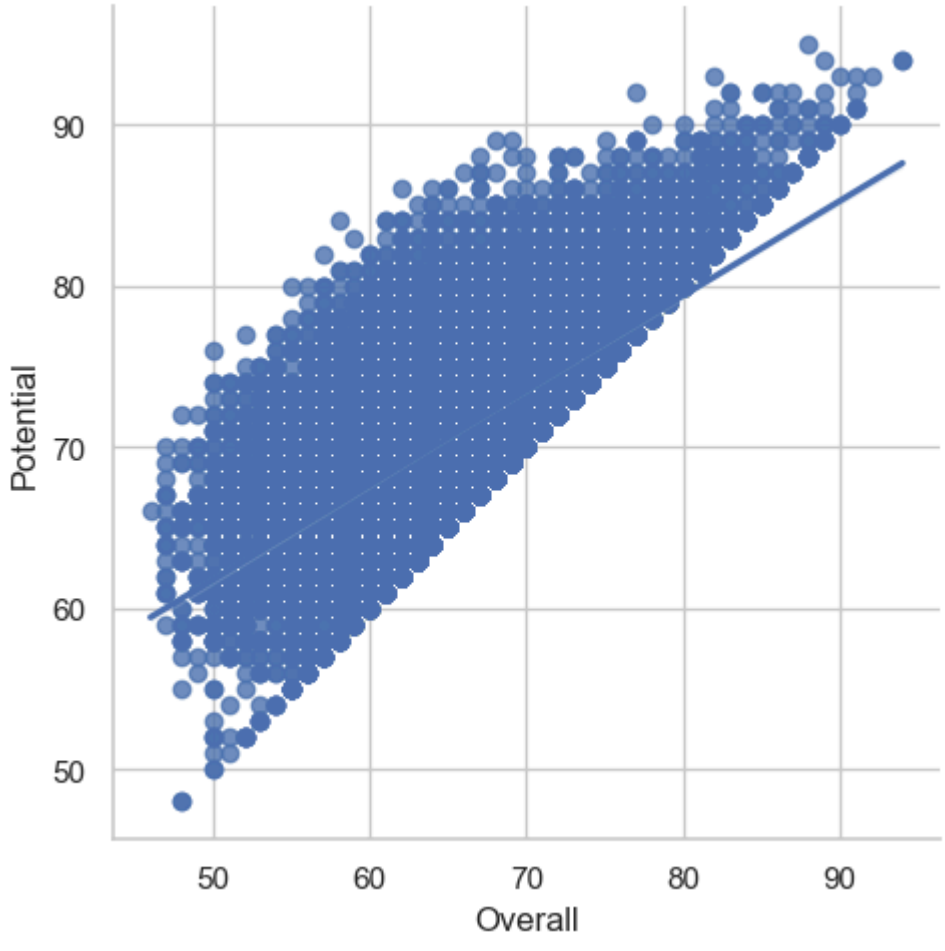
In [48]:
```
f, ax = plt.subplots(figsize=(8, 6))
ax = sns.regplot(x="Overall", y="Potential", data=fifa, color= "g", marker="+")
plt.show()
```



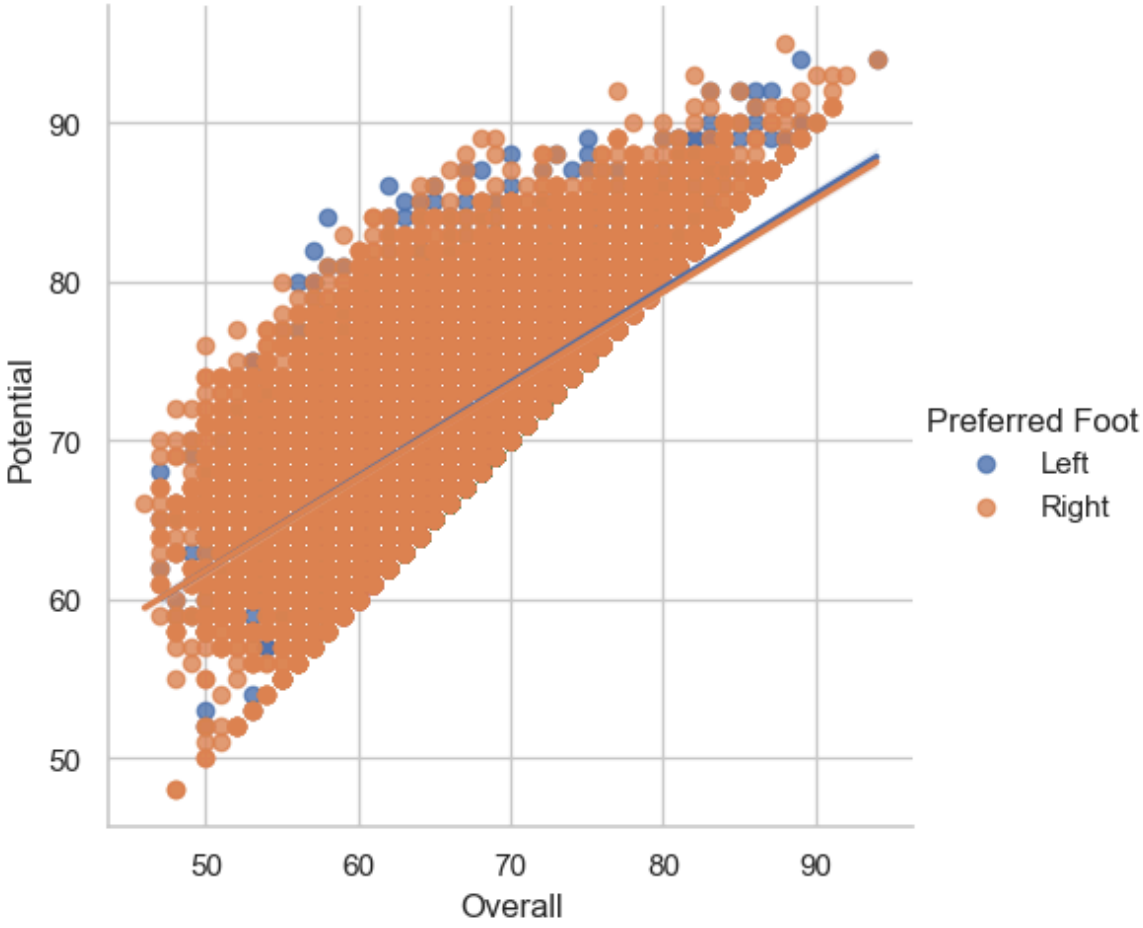
In [49]:
```
f, ax = plt.subplots(figsize=(8, 6))
sns.regplot(x="International Reputation", y="Potential", data=fifa, x_jitter=.01
plt.show()
```



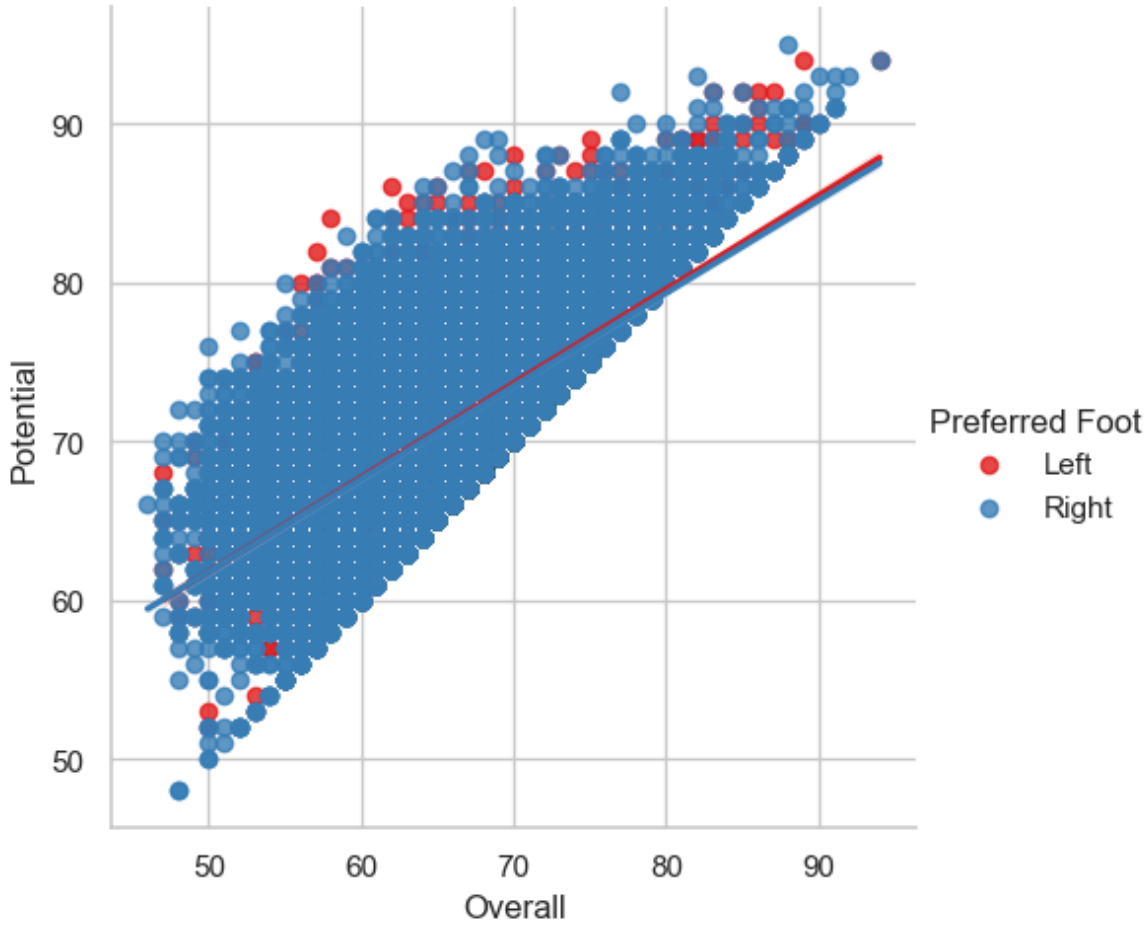
In [50]:
```
g= sns.lmplot(x="Overall", y="Potential", data=fifa)
plt.show()
```



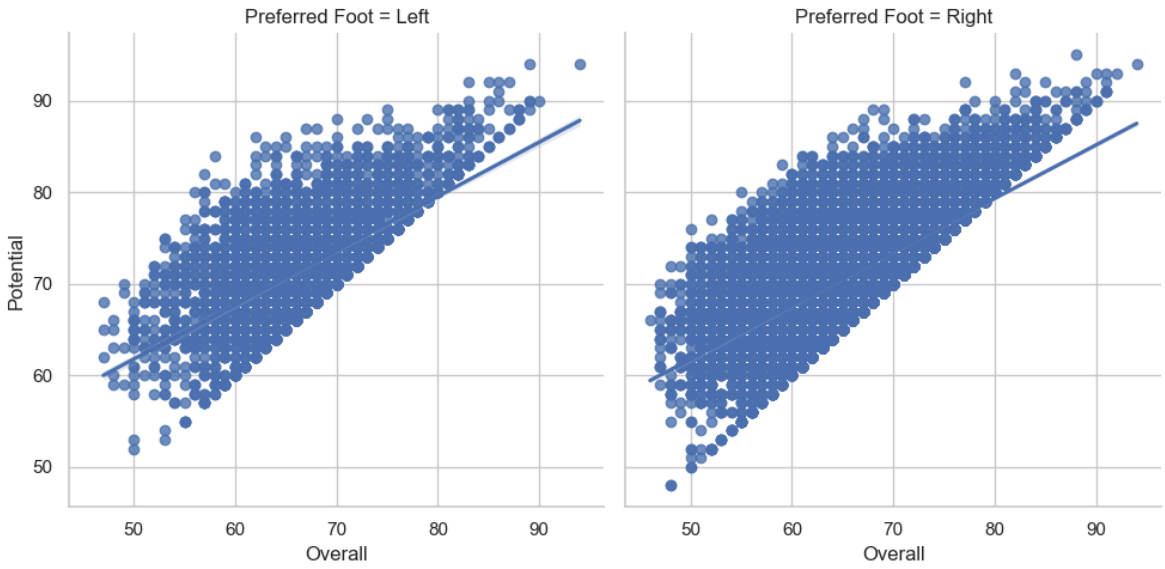
In [51]:
```
g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa)
plt.show()
```



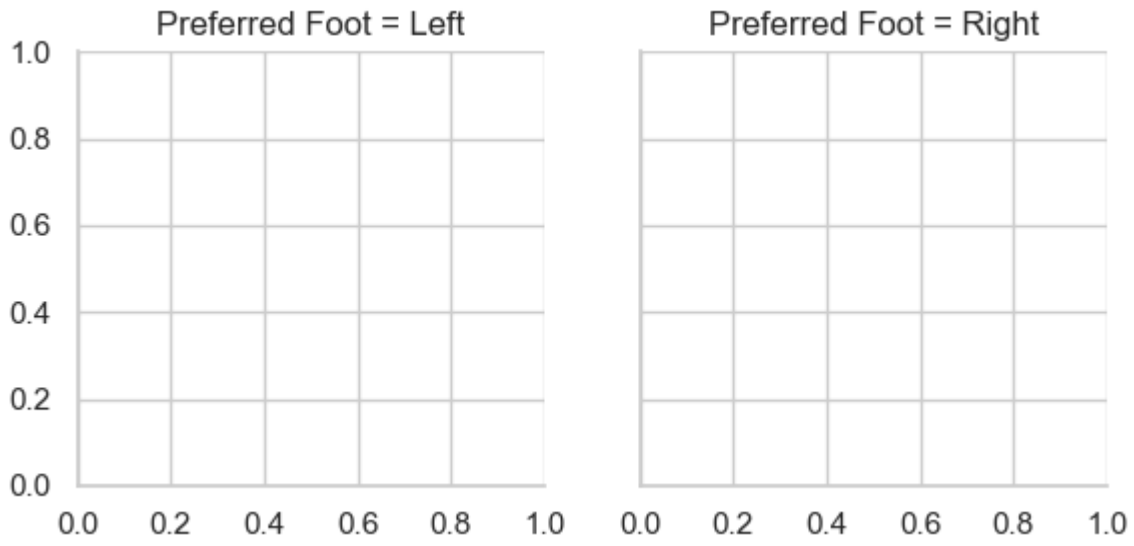
In [52]:
```
g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa, palet
plt.show()
```



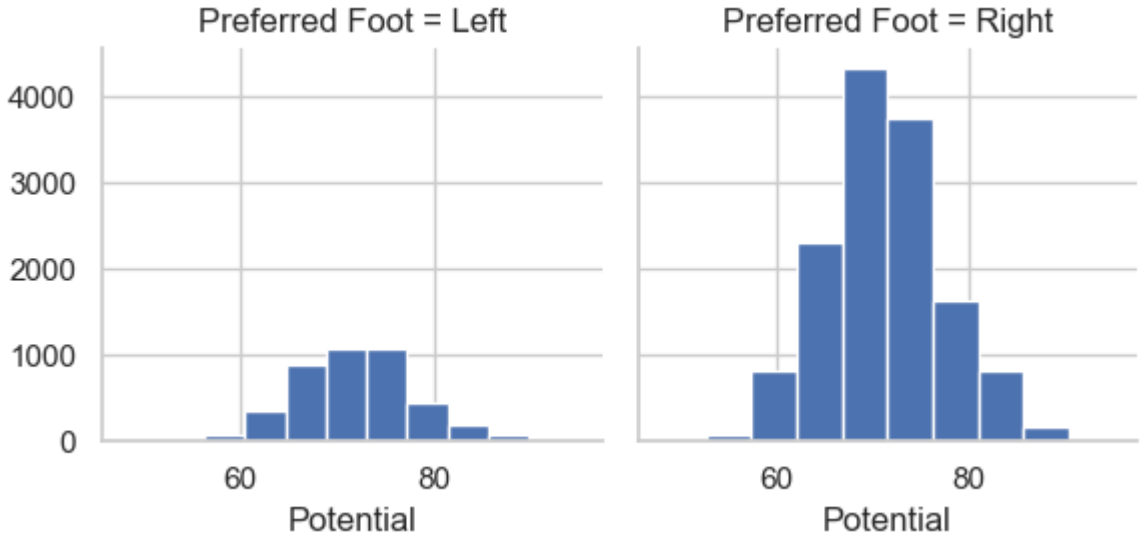
In [53]:
```
g= sns.lmplot(x="Overall", y="Potential", col="Preferred Foot", data=fifa)
plt.show()
```



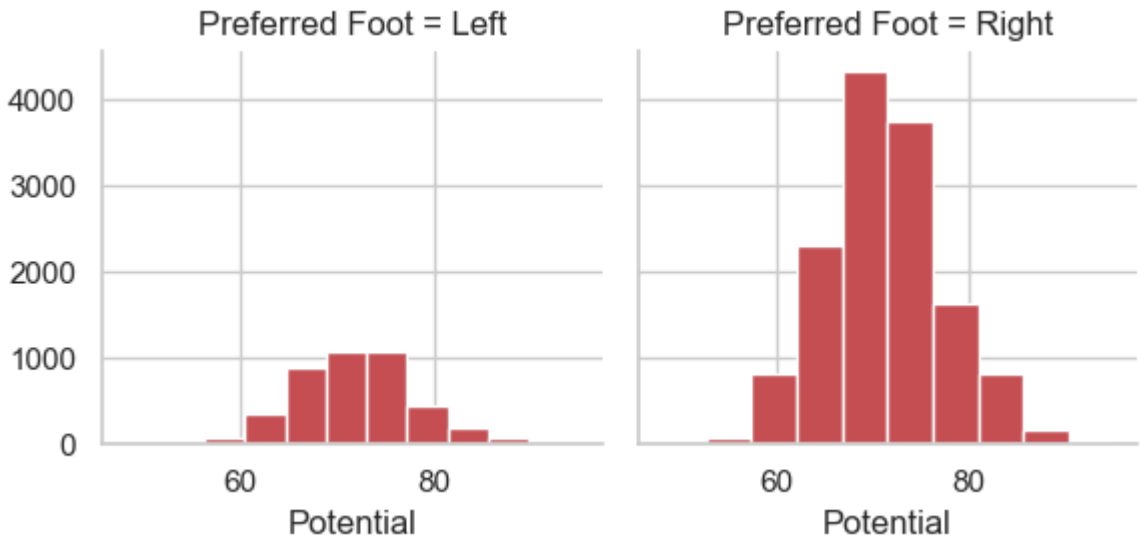
In [54]:
```
g = sns.FacetGrid(fifa, col="Preferred Foot")
plt.show()
```



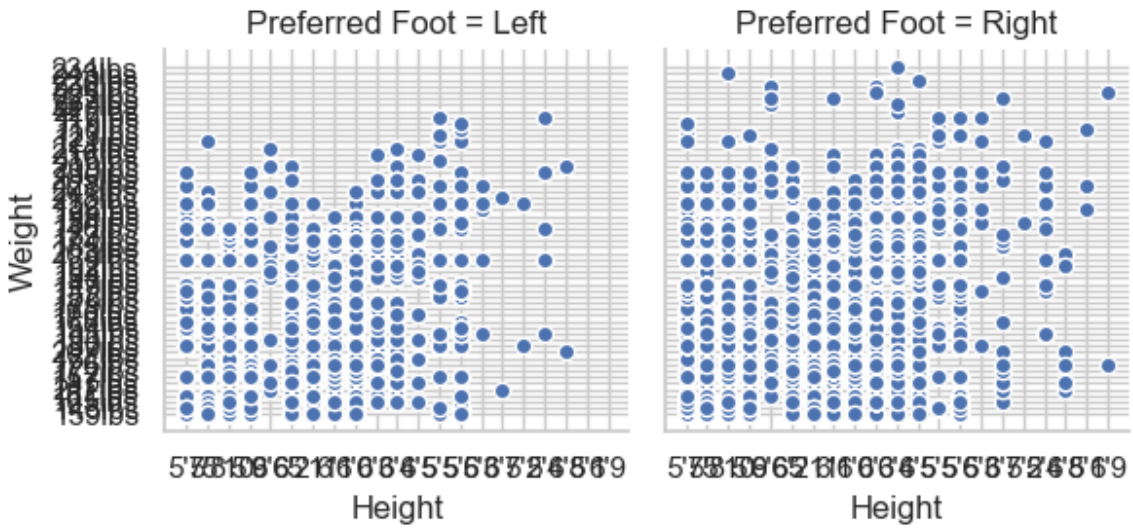
In [55]:
```
g = sns.FacetGrid(fifa, col="Preferred Foot")
g = g.map(plt.hist, "Potential")
plt.show()
```



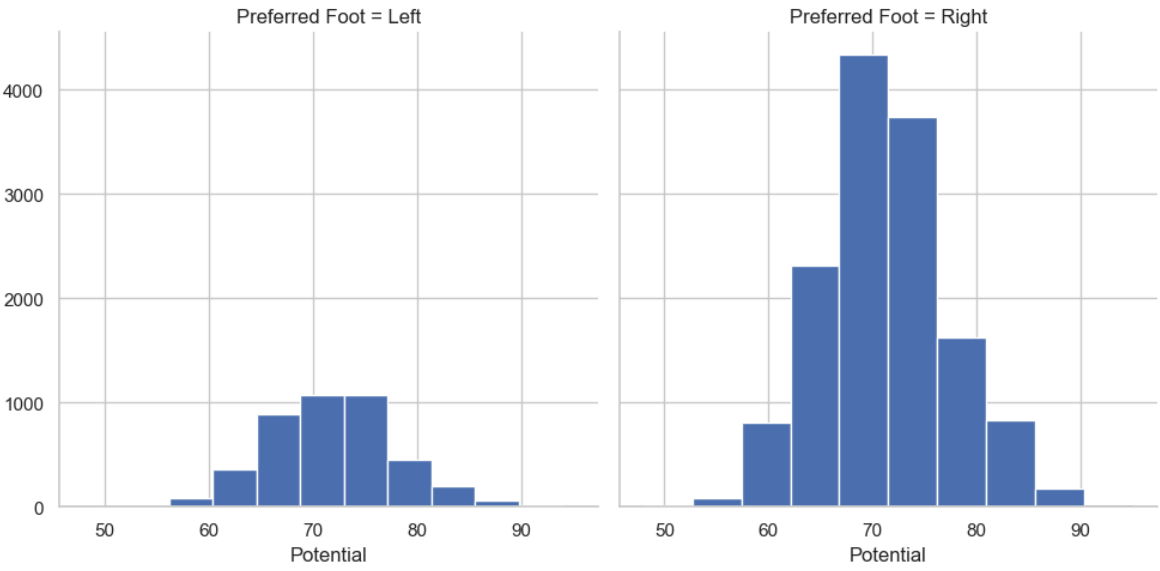
In [56]:
```
g = sns.FacetGrid(fifa, col="Preferred Foot")
g = g.map(plt.hist, "Potential", bins=10, color="r")
plt.show()
```



In [57]:
```
g = sns.FacetGrid(fifa, col="Preferred Foot")
g = (g.map(plt.scatter, "Height", "Weight", edgecolor="w").add_legend())
plt.show()
```

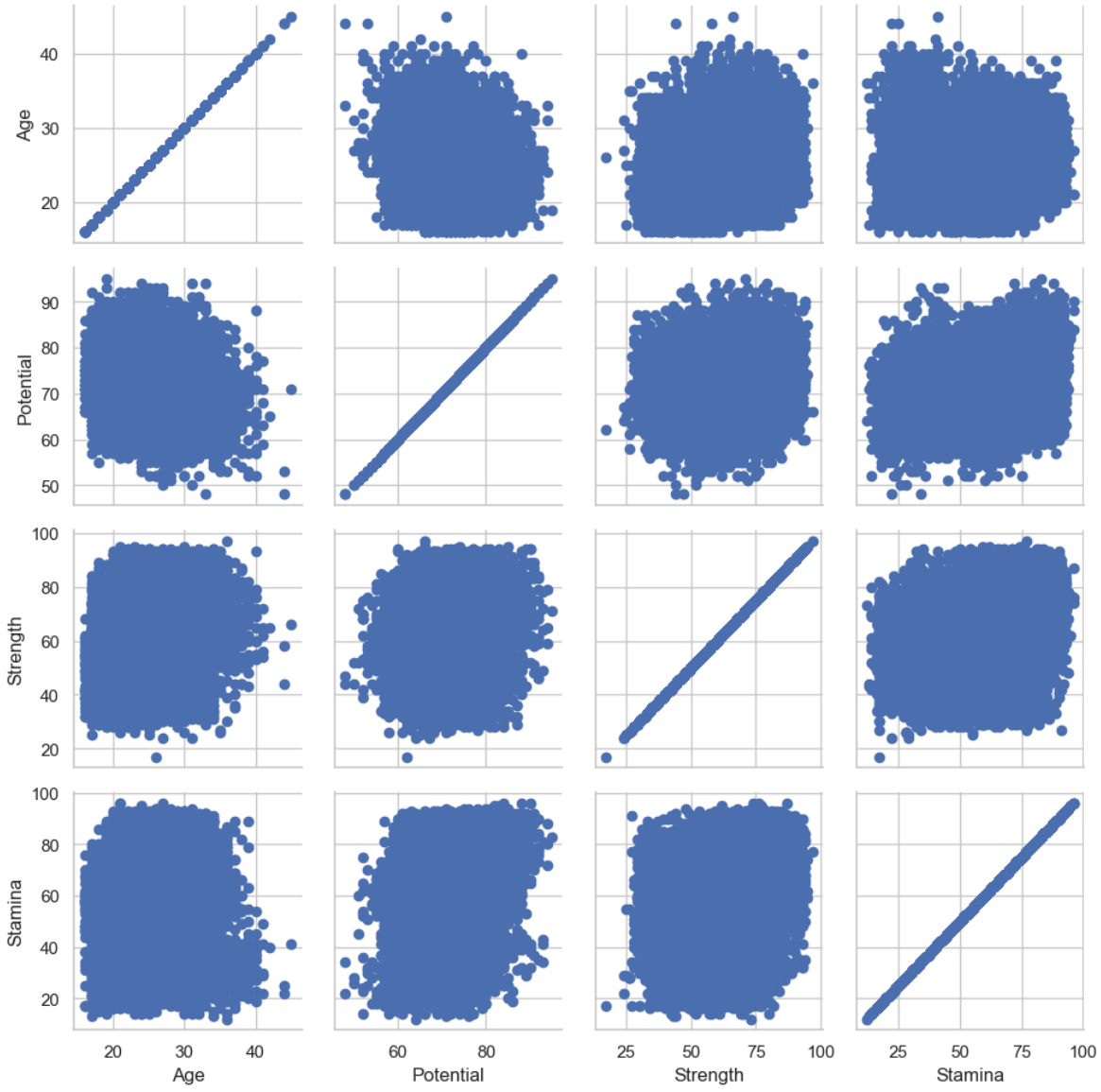


In [58]:
```
g = sns.FacetGrid(fifa, col="Preferred Foot", height=5, aspect=1)
g = g.map(plt.hist, "Potential")
plt.show()
```

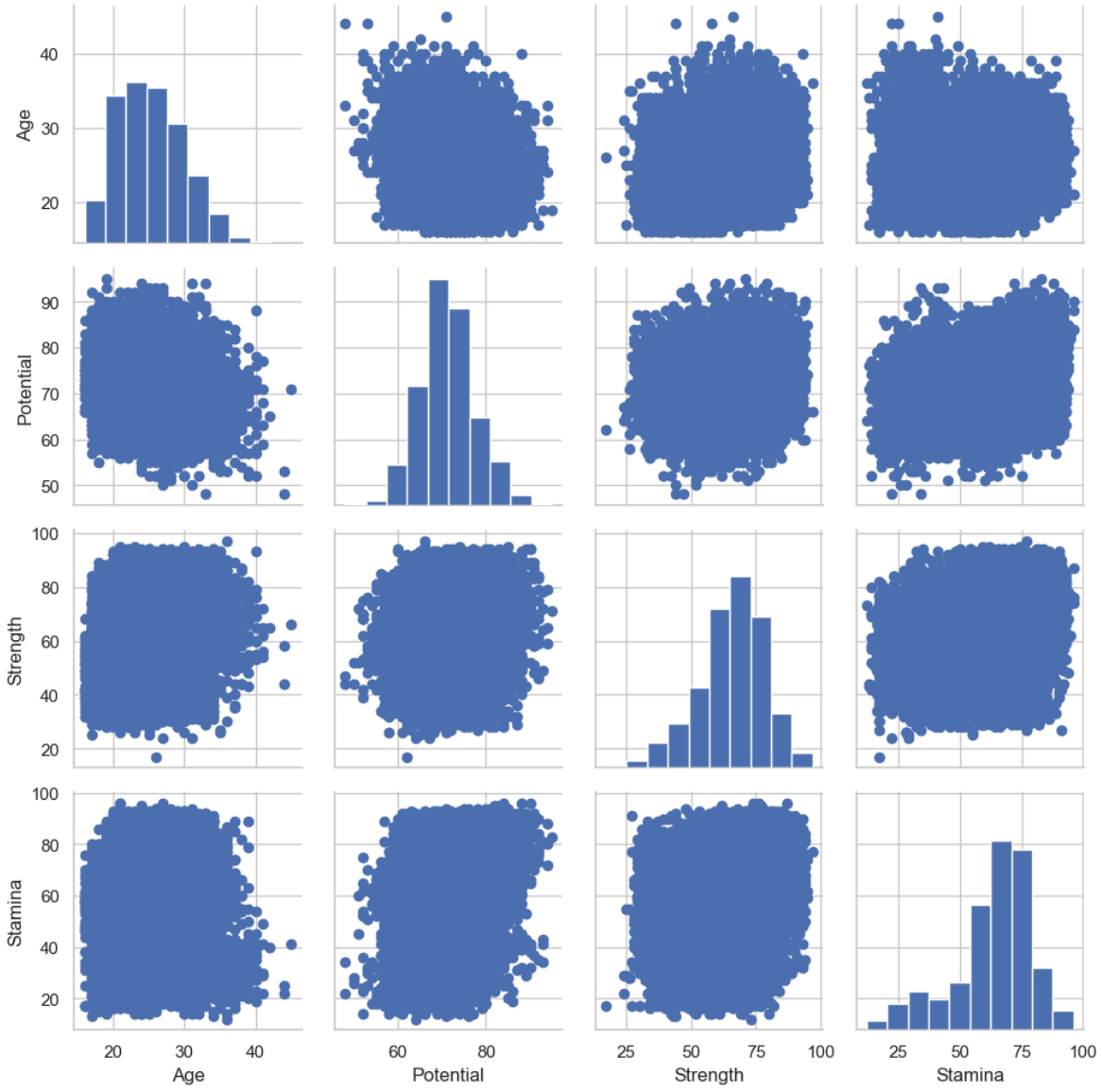


In [59]:
```
fifa19_new = fifa[['Age', 'Potential', 'Strength', 'Stamina', 'Preferred Foot']]
```

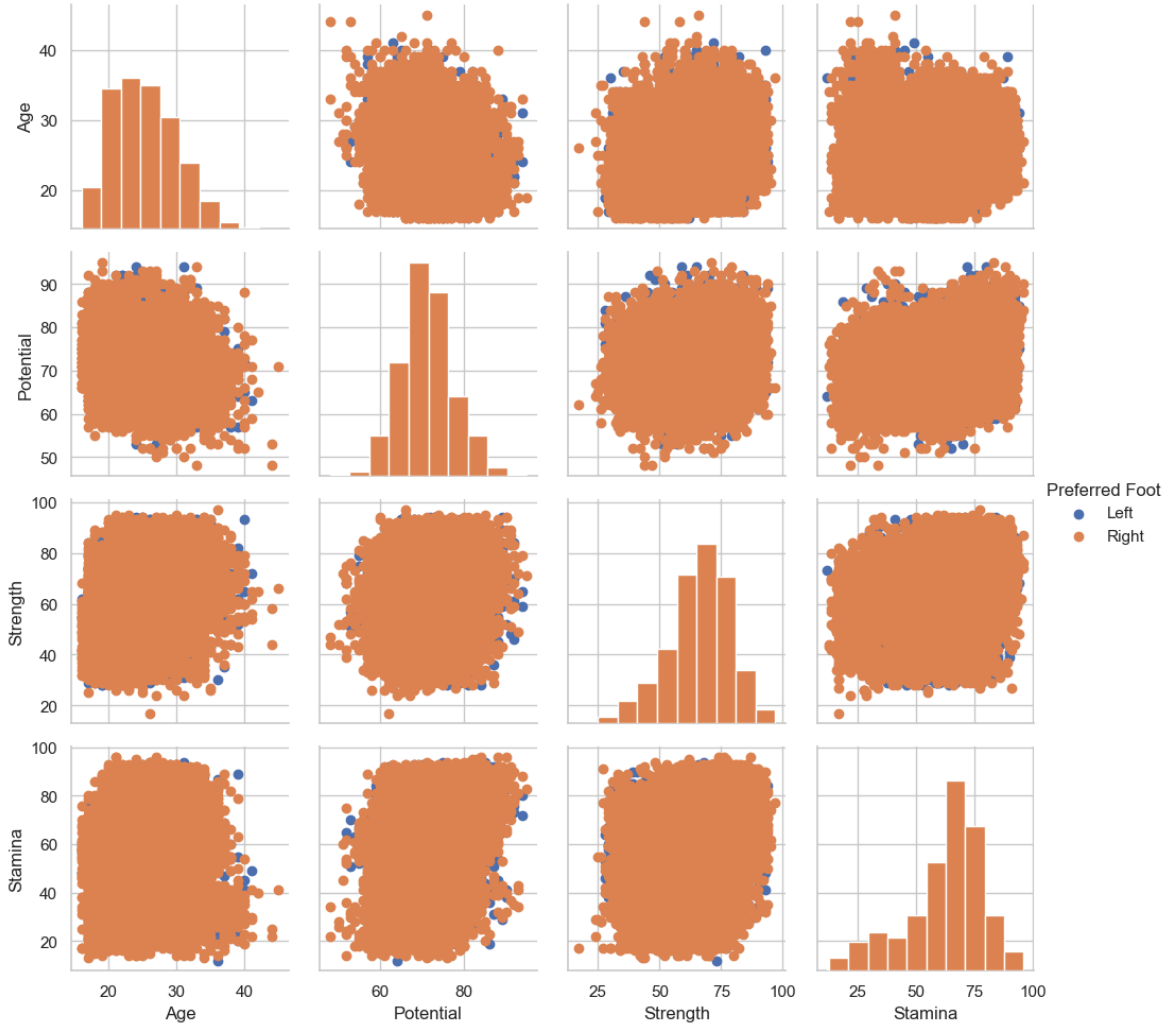
In [60]:
```
g = sns.PairGrid(fifa19_new)
g = g.map(plt.scatter)
plt.show()
```



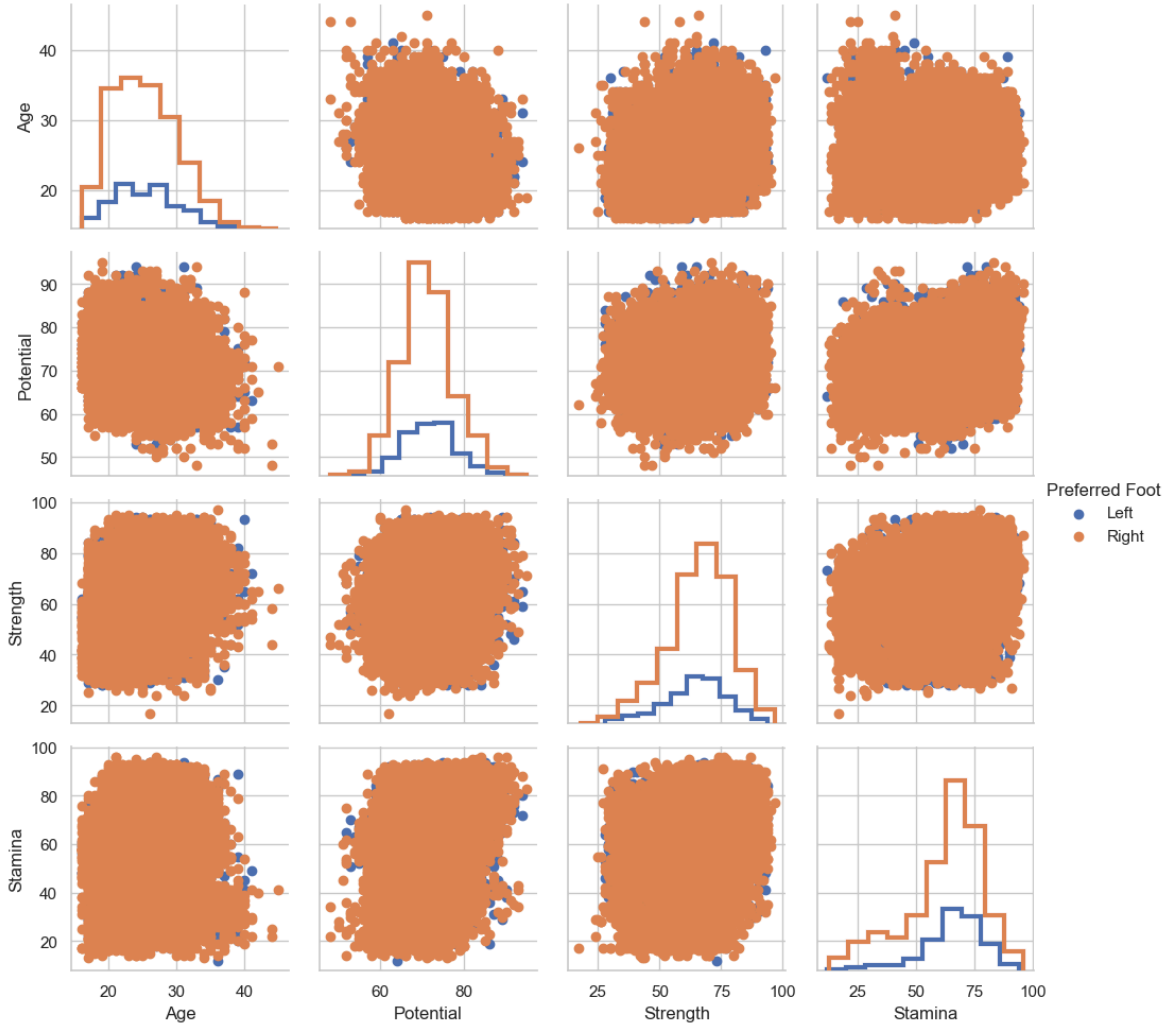
In [61]:
```
g = sns.PairGrid(fifa19_new)
g = g.map_diag(plt.hist)
g = g.map_offdiag(plt.scatter)
plt.show()
```



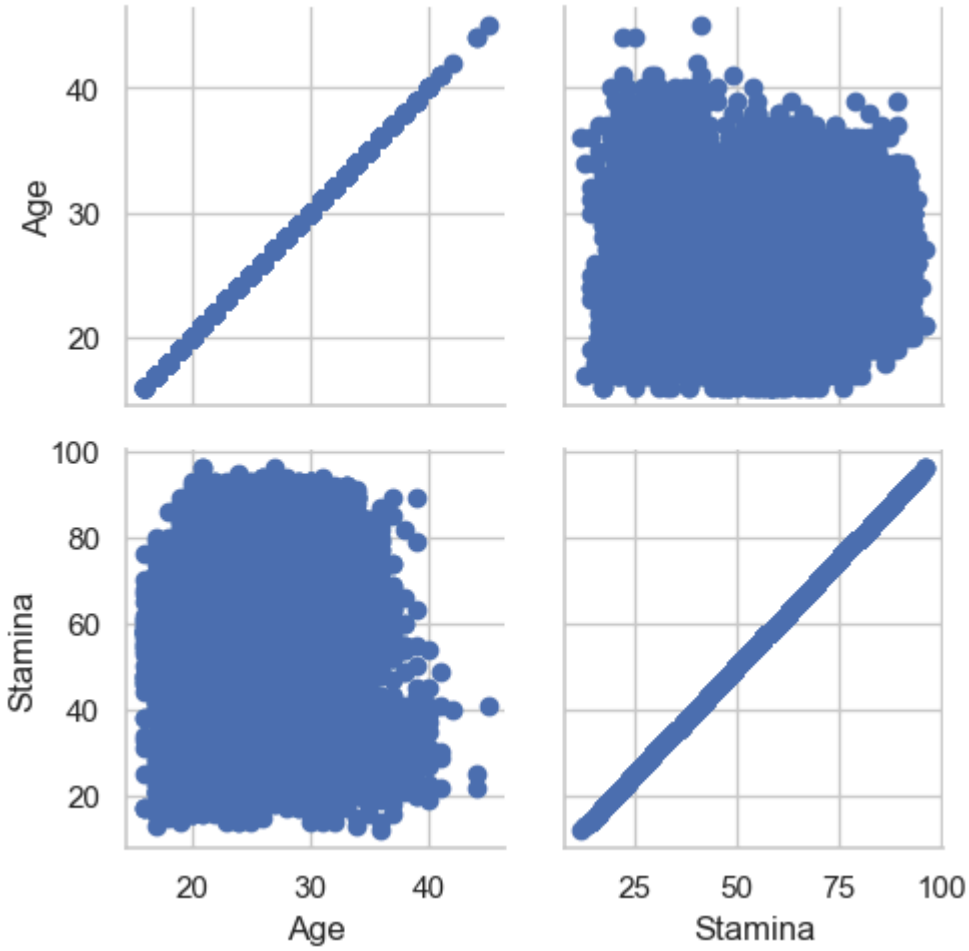
In [62]:
```
g = sns.PairGrid(fifa19_new, hue="Preferred Foot")
g = g.map_diag(plt.hist)
g = g.map_offdiag(plt.scatter)
g = g.add_legend()
plt.show()
```



In [63]:
```
g = sns.PairGrid(fifa19_new, hue="Preferred Foot")
g = g.map_diag(plt.hist, histtype="step", linewidth=3)
g = g.map_offdiag(plt.scatter)
g = g.add_legend()
plt.show()
```

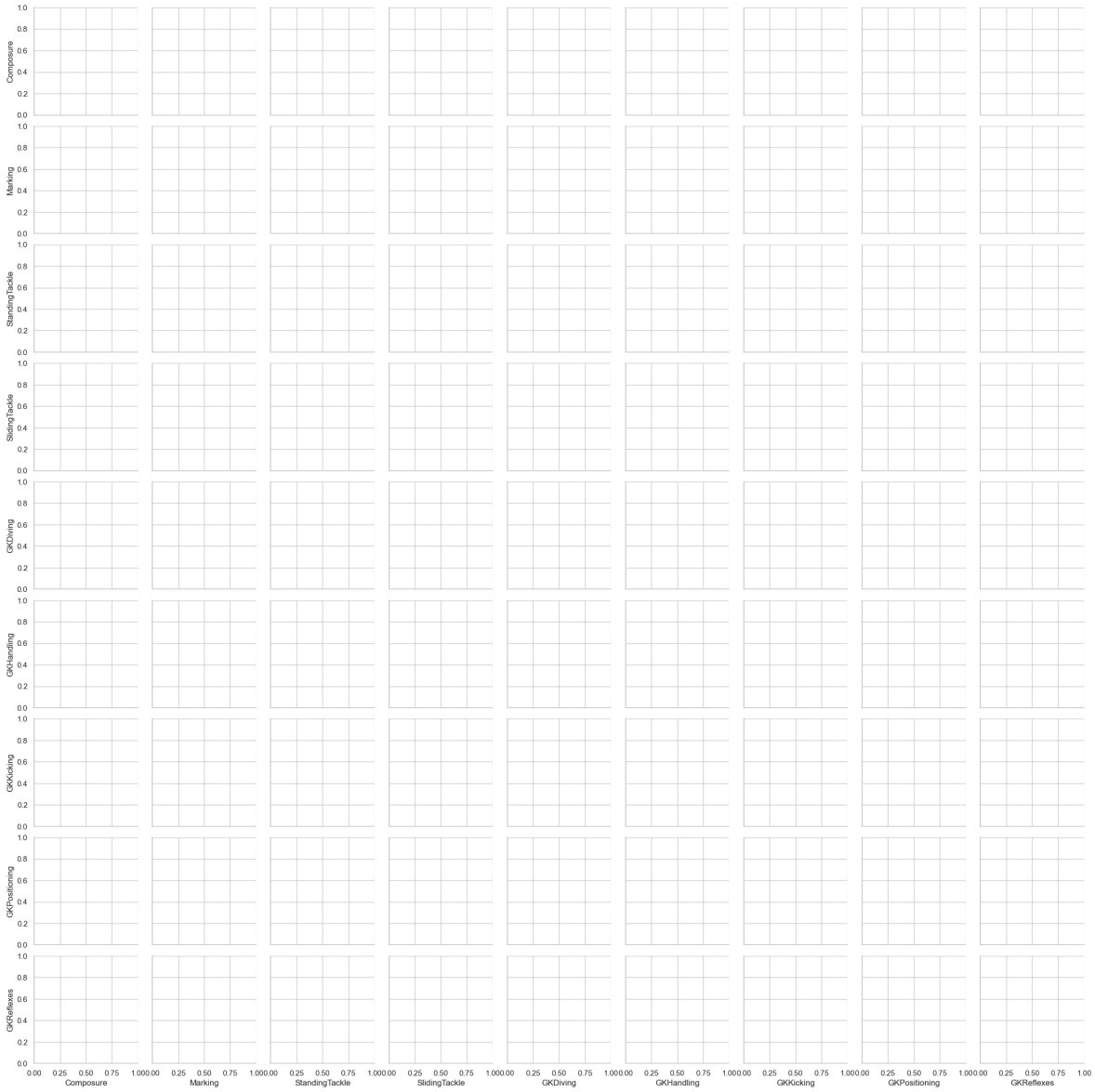


In [64]:
```
g = sns.PairGrid(fifa19_new, vars=['Age', 'Stamina'])
g = g.map(plt.scatter)
plt.show()
```



In [15]:
```
g = sns.PairGrid(temp)
```

In [16]:
```
plt.show()
```

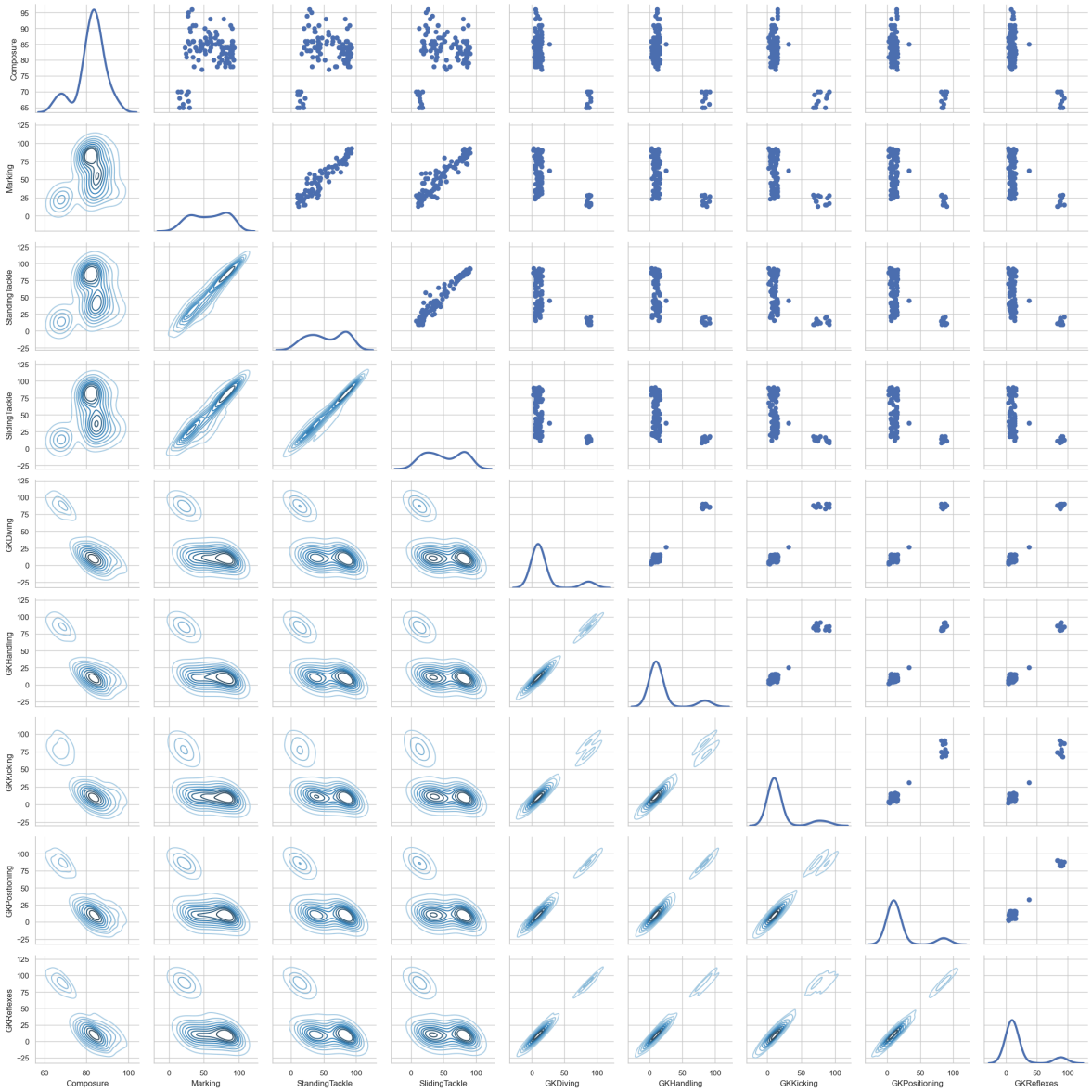


In [17]:
```
g = g.map_upper(plt.scatter)

g = g.map_lower(sns.kdeplot, cmap="Blues_d")

g = g.map_diag(sns.kdeplot, lw=3, legend=False)

plt.show()
```



In [ ]:

In [ ]:

In [ ]:

In [13]:
```
temp = fifa[["Composure", "Marking",    "StandingTackle",       "SlidingTackle",
```

In [14]:
```
temp
```

Out[14]:

	Composure	Marking	StandingTackle	SlidingTackle	GKDiving	GKHandling	GKKicl
0	96.0	33.0	28.0	26.0	6.0	11.0	
1	95.0	28.0	31.0	23.0	7.0	11.0	
2	94.0	27.0	24.0	33.0	9.0	9.0	
3	68.0	15.0	21.0	13.0	90.0	85.0	
4	88.0	68.0	58.0	51.0	15.0	13.0	
...	...	...	...	...	...	...	
95	84.0	84.0	87.0	87.0	7.0	12.0	
96	81.0	82.0	87.0	86.0	4.0	2.0	
97	80.0	64.0	52.0	54.0	6.0	7.0	
98	83.0	58.0	28.0	16.0	9.0	11.0	
99	84.0	80.0	83.0	76.0	11.0	9.0	

100 rows × 9 columns

In [ ]:

In [ ]: